

A TAXONOMIC STUDY OF SOME INDO-AUSTRALIAN DREPANIDAE (LEPIDOPTERA)

By ALLAN WATSON

INCLUDED in this paper are descriptions of five new species and five new subspecies. The three new, apparently endemic species from Celebes are of special interest. The affinities of these species and other Drepanidae from Celebes, some of which are of Austro-Malayan and others of Indo-Chinese origin, show that in this family as in most other groups of animals Celebes forms part of a broad zoogeographical zone (the "Wallacea" of Dickerson (1928) and subsequent authors) intermediate between the above Sub-regions.

A brief account of the interesting distribution of *Oreta griseotincta* Hampson and *Oreta carnea* (Butler) and the presence of polymorphism in *Psiloreta obtusa* (Walker) is given under the appropriate species.

The type specimens (where still in existence) of all the taxa mentioned in the text have been examined: they are in the British Museum (Nat. Hist.) unless otherwise stated.

Apart from the text-figures of the genitalia of the new species and subspecies it has been found necessary for purposes of comparison to figure, for the first time, the male or female genitalia of the following taxa: *Drapetodes magnifica magnifica* Swinhoe (♀), *Callidrepana vanbraeckeli* Gaede (♂♀), *Tridrepana flava unita* Watson (♀), *Oreta singapura singapura* Swinhoe (♂), *Oreta singapura continua* Warren (♂), *Oreta extensa* Walker (♂♀), *Oreta carnea* (Butler) (♂♀), *Psiloreta obtusa obtusa* (Walker) (♂), *Psiloreta obtusa speciosa* (Bryk) (♂), *Psiloreta obtusa aequitermen* Warren (♂). The text-figures of the genitalia are of a ventral view. A millimetre scale is placed by each drawing or group of drawings: the figures of the male genitalia of any taxon are to the same scale.

The measurements are recorded as follows: (a) mean wing-span (twice the distance between the apex and the centre of the mesothorax); (b) range of the measurements of the wing-span; (c) number of specimens measured.

I was able to borrow material from the following institutions: Rijkmuseum van Natuurlijke Historie, Leiden; Landbouwhogeschool te Wageningen; Zoological Museum, Amsterdam; Zoologisches Museum der Humboldt Universität, Berlin; Deutsches Entomologisches Institut, Berlin-Friedrichshagen; Museum Alexander Koenig, Bonn; Naturhistorisches Museum, Vienna; Senckenbergische Naturforschende Gesellschaft, Frankfurt am Main; Naturhistoriska Riksmuseum, Stockholm; Institut Royal des Sciences Naturelles de Belgique, Brussels.

I am very grateful to Dr. A. Diakonoff and to Prof. W. Roepke who kindly sent a large collection of material from the Dutch museums and also to Dr. A. Collart, Dr. Elli Franz, Dr. G. Friese, Dr. H. Hannemann, Dr. B. Hanson, Dr. H. Höne and Dr. R. Schönmann who arranged other valuable loans.

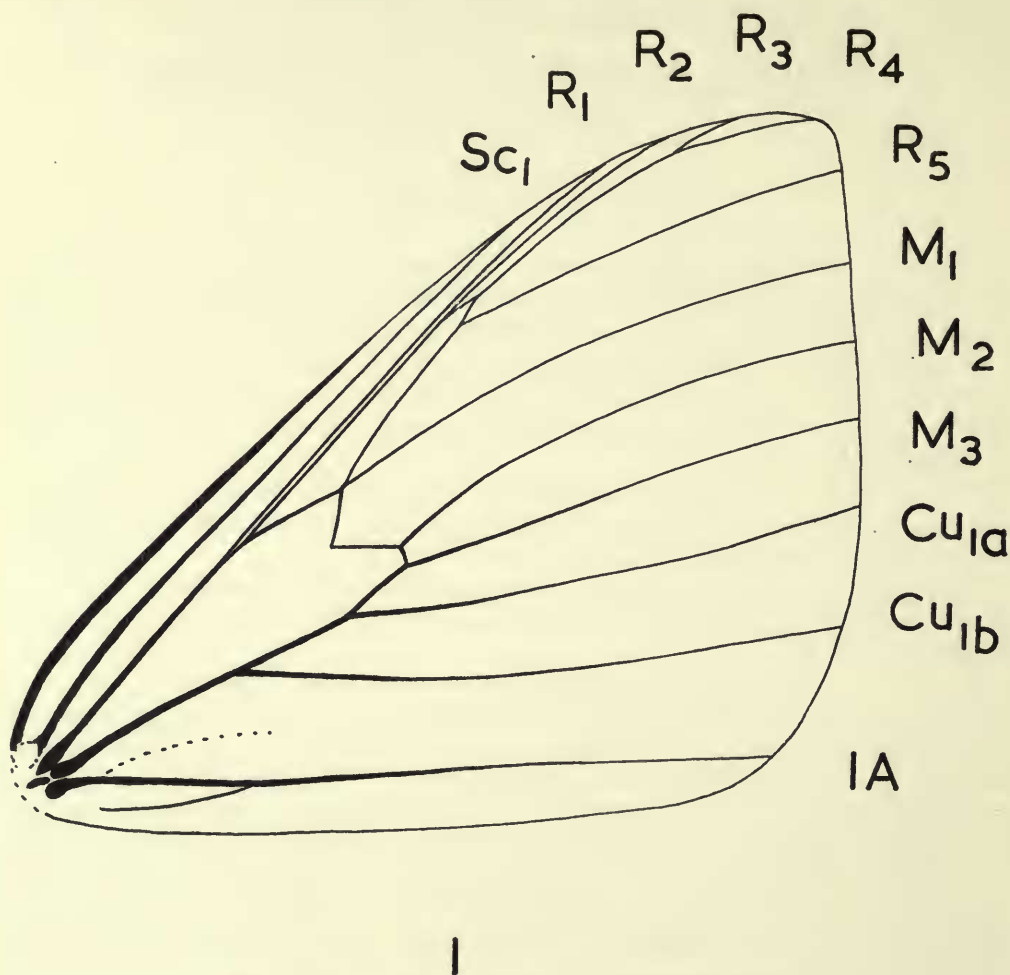


FIG. 1. *Teldenia latilinea* sp. n., fore wing venation.

***Teldenia latilinea* sp. n.**

TYPE. Holotype male, W. Celebes, Paloe, Lindoe, 3,700 ft., April, 1937 (J. P. A. Kalis); Drepanidae genitalia slide No. 858.

This species is probably most closely related to *T. nigrinotata* Warren which has similar male genitalia. It is readily distinguished from the latter species and from the other two species occurring in Celebes, *T. angustifascia* Watson and *T. niveata* (Pagenstecher), (see plates), by the pattern and form of the wing markings and by the male genitalia.

MALE (Pl. 65, fig. 1). 21.2, 20.2–22.8 mm. (10). Head dark reddish brown, but white towards labrum; collar white. Upper surface of antennal shaft white basad, pale brown distad; longest antennal pectination equal to three-quarters greatest diameter of eye. Palp white, irrorated with dark brown on outer surface.

Thorax white. Fore wing venation as in Text-fig. 1. Ground colour of both surfaces of both wings moderately lustrous, white, but costa of fore wing reddish brown at base and costal area on underside brown basad. Colour pattern of upper-side as in plate; markings brown or dark brown; postmedial broad, diffusely marked. Underside unmarked. Legs white except for brown front surface of foreleg.

Abdomen white.

Male genitalia as in Text-figs. 2–4.

FEMALE. 24.3, 22.6–25.0 mm. (15). Similar to male, but antenna weakly serrate, ciliate.

Female genitalia as in Text-fig. 5.

MATERIAL EXAMINED. (It is worth noting that a much greater number of females than males seems to have been collected.) *British Museum (Nat. Hist.)*. W. CELEBES: 2 ♂ and 12 ♀ paratypes, Paloe, G. Tompoe, 2,700 ft., Jan., Feb., 1937 (J. P. A. Kalis); 3 ♂ and 9 ♀ paratypes, Paloe, Lindoe, 3,700 ft., April, 1937 (J. P. A. Kalis); 3 ♂ and 5 ♀ paratypes, Paloe, G. Rangkoenau, 1,800 ft., Nov., Dec., 1936 (J. P. A. Kalis); 3 ♂ and 18 ♀ paratypes, Paloe, Loda, 4,000 ft., May, 1937 (J. P. A. Kalis); 4 ♂ and 24 ♀ paratypes, Paloe, Sidaonta, 4,500 ft., Jan., 1937 (J. P. A. Kalis); 7 ♀ paratypes, Paloe, Koelawi, 3,100 ft., March, 1937 (J. P. A. Kalis). SW. CELEBES: 1 ♀ paratype, Parang-bobo Goa, G. Lampobattang, 5,000 ft., May, 1938, March, 1938 (J. P. A. Kalis). E. CELEBES: 3 ♂ and 4 ♀ paratypes, Ulu Kolaka, 500 m., v–vi. 1939 (J. P. A. Kalis).

A female in the British Museum collection from N. Celebes, Tondano, Ramboekers (Weigall), probably belongs to this species.

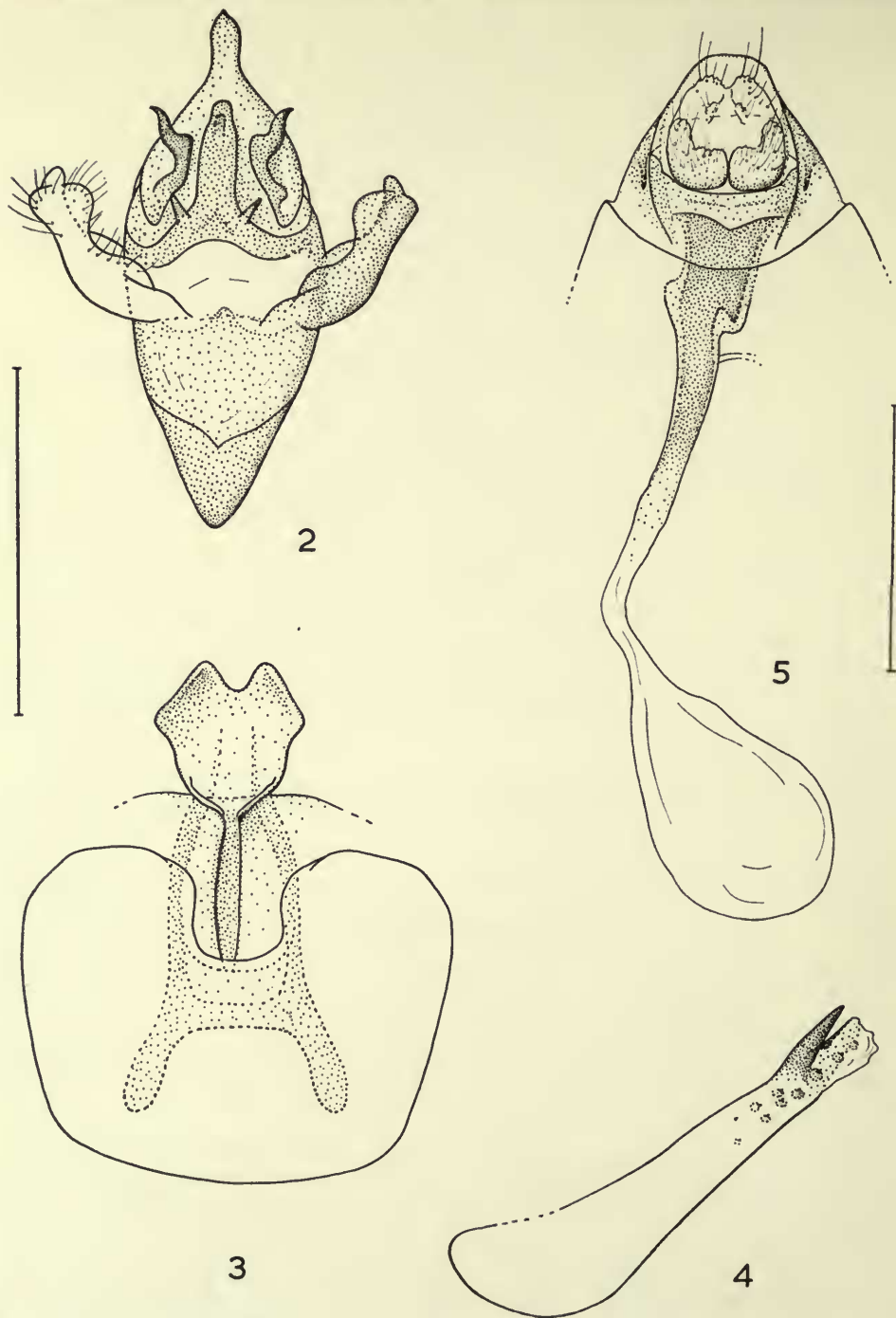
Teldenia angustifascia sp. n.

TYPE. Holotype male, W. Celebes, Paloe, G. Tompoe, 2,700 ft., Feb., 1937 (J. P. A. Kalis); Drepanidae genitalia slide No. 859.

This species is readily separated from the rest of the genus by the colour-pattern. The fact that vein R_1 of the fore wing arises from the areole and not from the cell, together with certain similarities in the male genitalia, suggest that *T. illunata* Warren is its closest relative.

MALE (Pl. 1, fig. 3). 25.5, 24.0–26.4 mm. (10). Head dark reddish brown, but white towards labrum; collar white. Palp white, irrorated on outer surface with dark brown. Upper surface of antenna white basad, brown distad; longest antennal pectination equal to about three-quarters greatest diameter of eye.

Thorax white. Fore wing venation as in Text-fig. 6. Ground colour of both surfaces of both wings slightly lustrous, white. Costa of fore wing reddish brown dorsally, except at apex, and dark brown at base on underside. Colour pattern of upperside as in plate: terminal spots very dark reddish brown, remaining markings



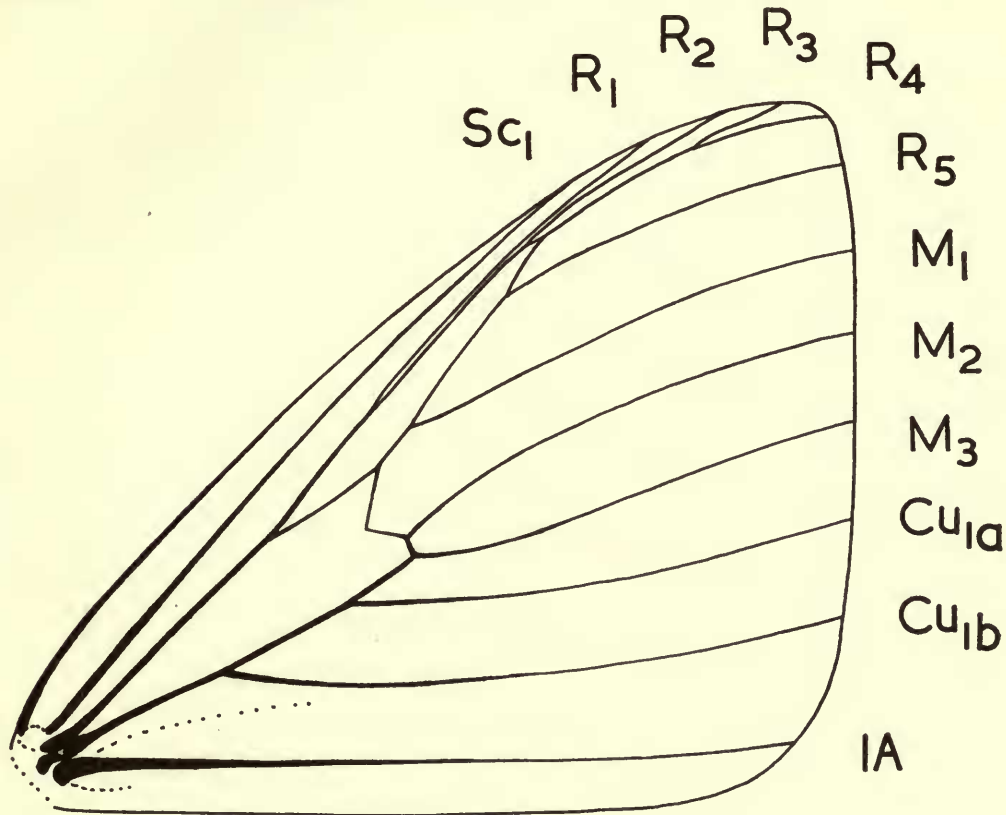
FIGS. 2-5. *Teldenia latilinea* sp. n. Male: 2, genitalia; 3, eighth sternum and tergum; 4, aedeagus. 5, Female genitalia.

reddish brown; position of postmedial fascia diagnostic. Underside unmarked. Legs white except for brown front surface of foreleg.

Abdomen white.

Male genitalia as in Text-figs. 8-10.

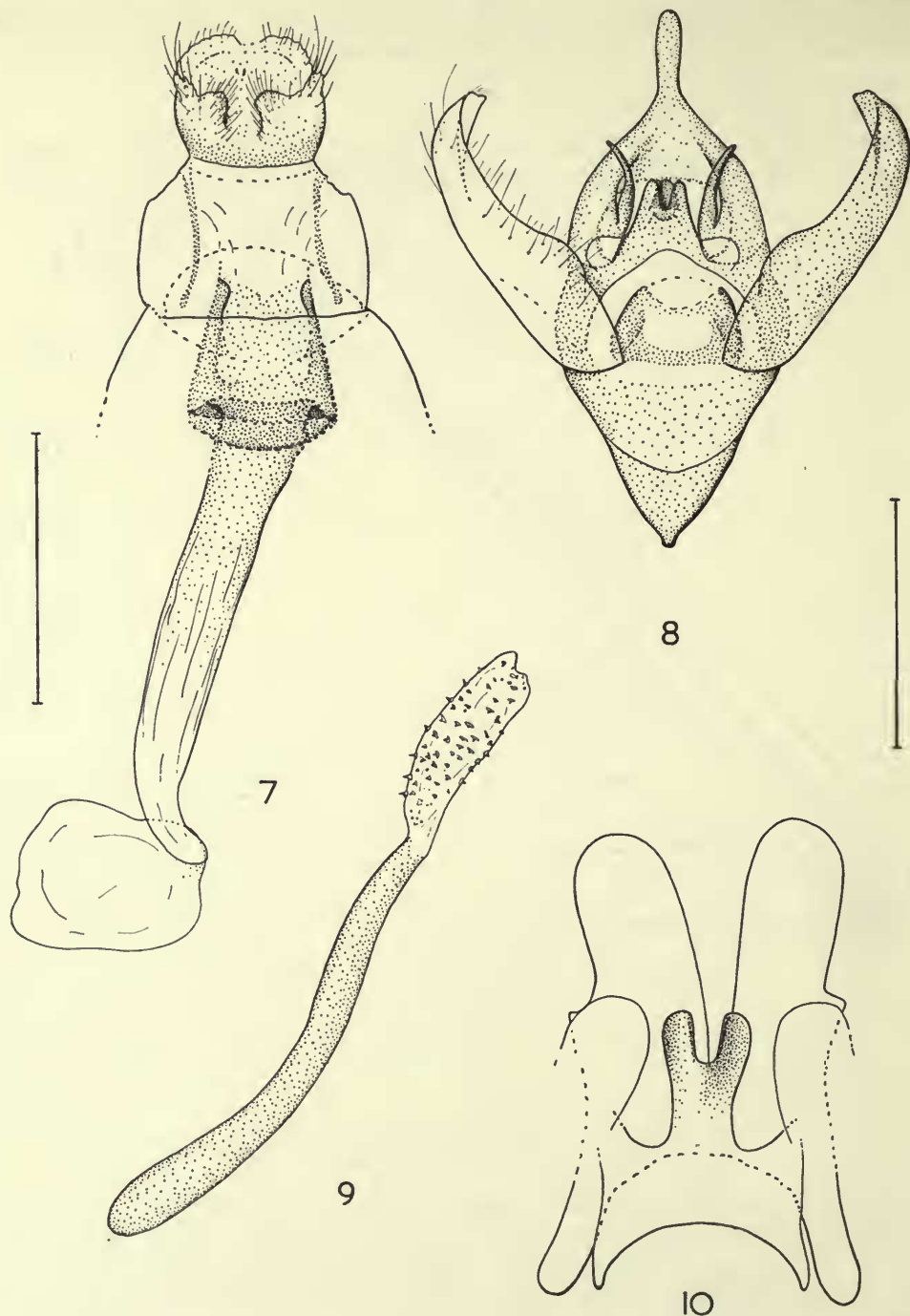
FEMALE. 28.1, 26.8-29.6 mm. (7). Similar to male but antenna ciliate and weakly serrate, not bipectinate. Female genitalia as in Text-fig. 7.



6

FIG. 6. *Teldenia angustifascia* sp. n., fore wing venation.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. W. CELEBES: ♂ holotype, 4 ♂ paratypes and 1 ♀ paratype, Paloe, G. Tompoe, 2,700 ft., Feb., 1937 (J. P. A. Kalis); 1 ♀ paratype, Paloe, Koelawi, 3,100 ft., March, 1937 (J. P. A. Kalis); 1 ♂ and 1 ♀ paratype, Paloe, Loda, 4,000 ft., May, 1937 (J. P. A. Kalis); 3 ♂ and 7 ♀ paratypes, Paloe, Lindoe, 3,700 ft., April, 1937 (J. P. A. Kalis). N. CELEBES: 2 ♂ and 1 ♀ paratypes, Minahassa, Tomohon, vi, vii. 1954 (A. H. G. Alston). E. CELEBES:



FIGS. 7-10. *Teldenia angustifascia* sp. n. 7, female genitalia. Male: 8, genitalia; 9, aedeagus; 10, eighth sternum and tergum.

2 ♂ and 2 ♀ paratypes, Ulu Kolaka, 500 m., v-vi. 1939 (Kalis). *Natural History Museum, Leiden*. N. CELEBES : 3 ♂ paratypes, Minahassa, 1921 (P. J. v. d. Bergh, Lzn.). *Zoological Museum, Humboldt University, Berlin*. N. CELEBES : 1 ♂ paratype, Minahassa.

Drapetodes magnifica Swinhoe

Drapetodes magnifica Swinhoe, 1902, *Trans. ent. Soc. Lond.* **1902** : 589.

Drapetodes magnifica Swinhoe, Warren in Seitz, 1922, *Gross-Schmett. Erde*, **10** : 410.

Drapetodes Swinhoe, Gaede, 1931, *Lepid. Cat.* **49** : 15.

TYPE. Holotype ♀, Singapore ; Drepanidae genitalia slide No. 880.

The colour pattern of this species readily distinguishes it from the rest of the genus (see plate of *denotata* ssp. n.). The genitalia are figured in Text-figs. 11-14.

DISTRIBUTION. The nominate subspecies is known to occur in Singapore, Malaya and W. Java. The subspecies *denotata* ssp. n. may be restricted to Borneo.

Drapetodes magnifica denotata ssp. n.

TYPE. Holotype, ♂. Borneo, Kariorang, 21.iii.1927 (Qu. de Quarles); Drepanidae genitalia slide No. 878.

Similar to the nominate subspecies but with more clearly marked, white basal fascia on hind wing (see Pl. 65, fig. 4) and with several significant differences in the male and female genitalia (see Text-figs. 15-18).

DISTRIBUTION. East Borneo.

MATERIAL EXAMINED. *Landbouwhogeschool, Wageningen*. E. BORNEO : holotype ♂ ; allotype ♀ from type locality, 7.ii.1927.

Tridrepana fulvata celebica spp. n.

TYPE. Holotype male, W. Celebes, Paloe, G. Tompoe, 2,700 ft., Jan., 1937 (J. P. A. Kalis) ; Drepanidae genitalia slide No. 317.

MALE. 35.9, 34.8-37.4 mm. (5). (Text-fig. 19.) Apparently indistinguishable externally from the nominate subspecies and *T. fulvata brevis* Watson. In the male genitalia the anellus is much broader at the base than in the nominate subspecies. (See Watson, 1957.)

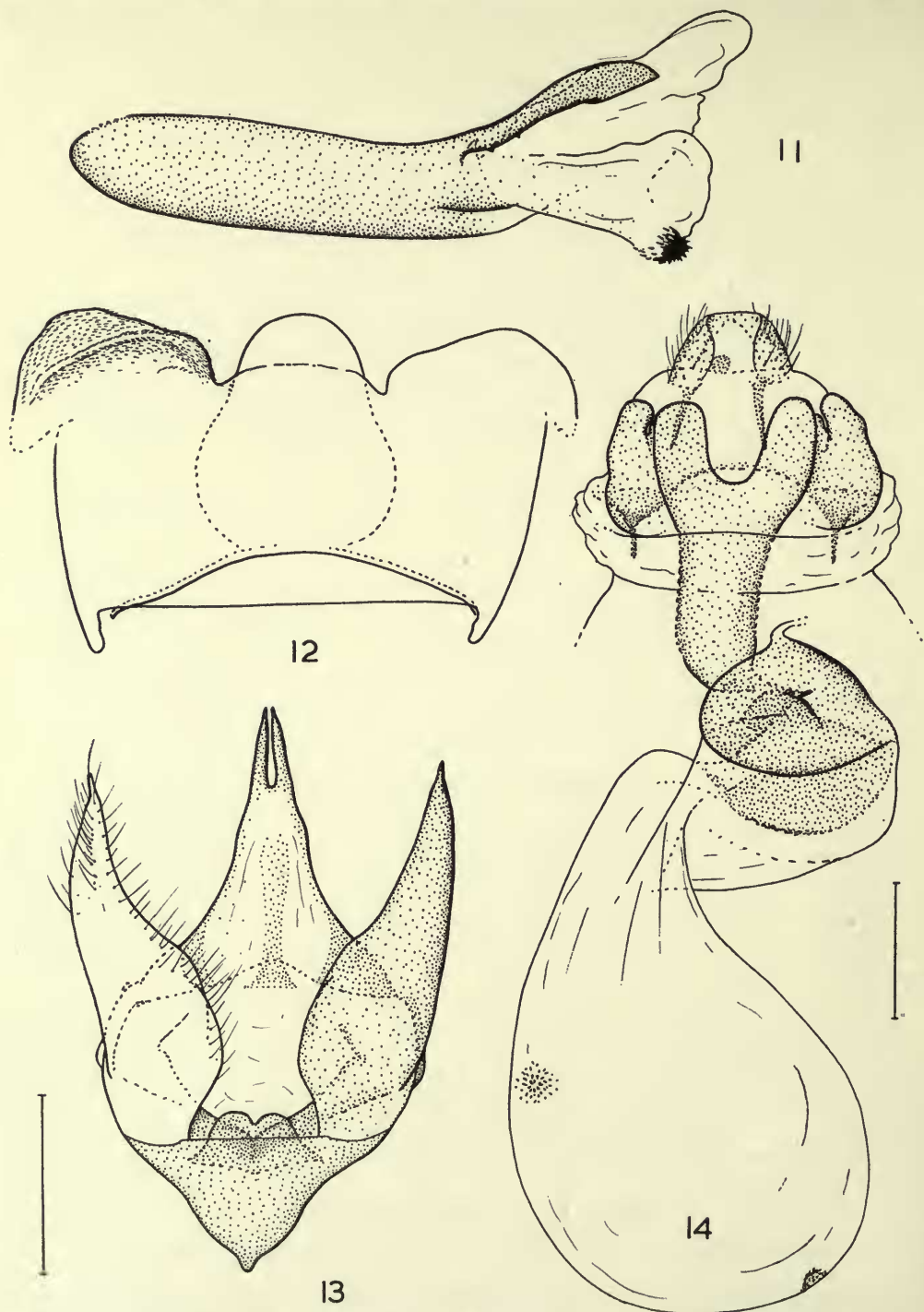
All the specimens examined belong to the yellow form of the species.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. W. CELEBES : ♂ holotype ; 1 ♂ paratype, Koelawi Paloe, March, 1937 (J. P. A. Kalis). *Zoological Museum, Amsterdam*. NE. CELEBES : 1 ♂ paratype, Minahassa, 1920 ; 1 ♂ paratype, Bolang Mongondow. *Institut Royal des Sciences Naturelles, Brussels*. NE. CELEBES : 1 ♂ paratype, Tonsea Lama, 12 May (van Braeckel).

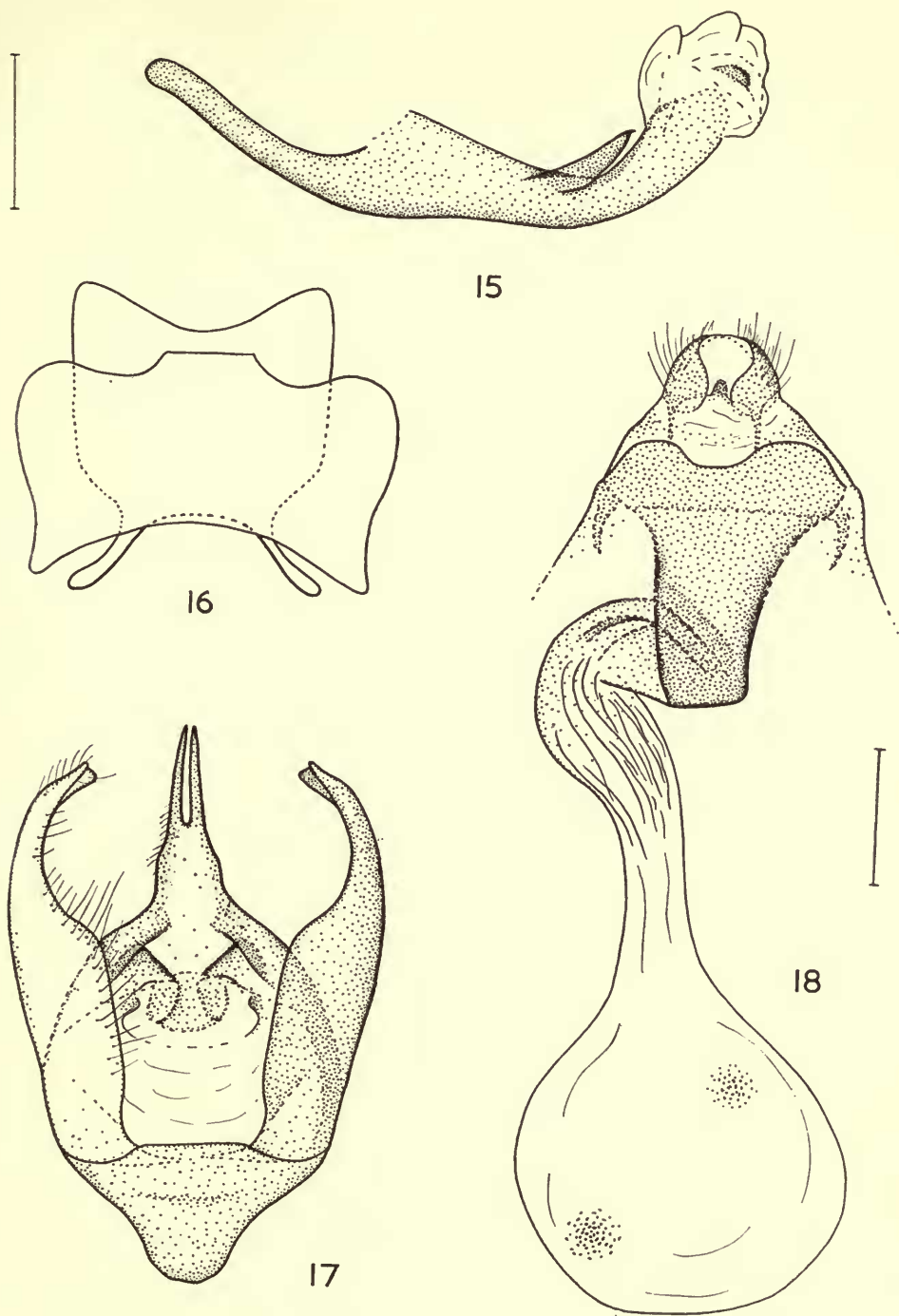
Tridrepana flava unita Watson

Tridrepana flava unita Watson, 1957, *Bull. Brit. Mus. (nat. Hist.) Ent.* **4** : 496.

TYPE. Holotype male, N. Celebes, Minahassa, 1922, Coll. P. J. v. d. Bergh, Lzn. I have been sent recently five females of this subspecies which at the time of my



FIGS. 11-14. *Drapetodes magnifica magnifica* Swinhoe. Male: 11, aedeagus; 12, eighth sternum and tergum; 13, genitalia. 14, Female genitalia.



FIGS. 15-18. *Drapetodes magnifica denotata* ssp. n. Male : 15, aedeagus, 16, eighth sternum and tergum ; 17, genitalia. 18, Female genitalia.

revision of *Tridrepana* Swinhoe (Watson, 1957) was known only from two males. A third male has also been examined and found to belong to this subspecies.

FEMALE. 57.6, 56.2–58.2 mm. (4). Similar to male but with longest antennal pectination equal to three-quarters greatest diameter of eye. Genitalia similar to those of *T. flava contracta* Watson (see Watson, *loc. cit.*, fig. 149). (The last two lines of the description of *T. flava contracta* Watson, see Watson, *loc. cit.* p. 495, should read: "Female (Text-fig. 149). Dorsal ovipositor lobes separated by a shallower emargination; each lobe less elongate.")

MATERIAL EXAMINED. Zoological Museum, Amsterdam. N. CELEBES: 3 ♀, Minahassa, 1920 and 1 ♀ Bol. Mon, 1921 (Coll. P. J. v. d. Bergh, Lzn.). Institut Royal des Sciences Naturelles, Brussels. N. CELEBES: 1 ♀, Menado (van Braeckel); 1 ♂ Menado (van Braeckel).

Albara vinacea (Moore)

Drepana vinacea Moore, 1879, Descr. New Indian Lep. Coll. Atkinson, p. 85.

Albara vinacea (Moore), Warren in Seitz, *Gross-Schmett. Erde*, 10: 468, pl. 49h. (Good colour-illustration.)

Albara vinacea (Moore) Gaede, 1931, *Lepid. Cat.* 49: 33.

Albara birmanica Bryk, 1943, *Ark. Zool.* 34A No. 13: 18, pl. 2, fig. A6. (Good half-tone illustration.) **Syn. nov.**

TYPE. I select as lectotype a male specimen in the collection of the British Museum (Nat. Hist.) bearing the following data: "Darjeeling 1864"; "*Drepana vinacea* Moore" (the latter in Moore's handwriting on the reverse of the locality label); "Moore Coll. 94–106"; "*Drepanidae* genitalia slide No. 724".

DISTRIBUTION. Sikkim and NE. India.

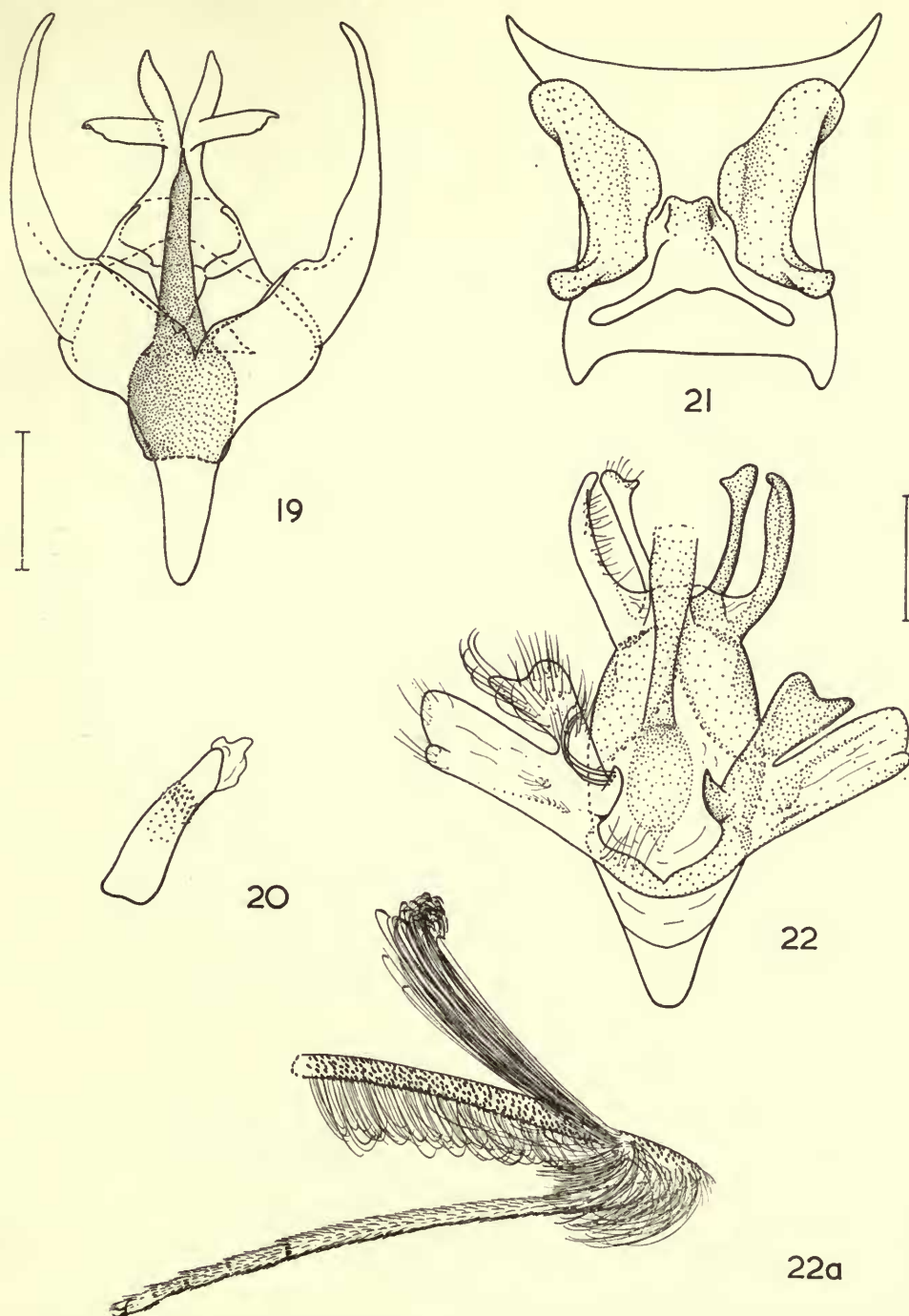
Albara fuscilinea sp. n.

TYPE. Holotype ♂, Malay Peninsula, Selangor, Bukit Kutu, 8,500 ft., 22.iii.1931 (H. M. Pendlebury); *Drepanidae* genitalia slide No. 891.

Differs from *Albara vinacea* (Moore) (see plates of *vinacea* mentioned above) in that the pale medial areas on both fore and hind wings are edged with dark scales and are therefore more prominent, and that on the underside of the hind wing there is a broad strongly marked, dark brown, postmedial fascia and a large dark brown patch at the posterodistal end of the cell extending towards the anal margin. The male genitalia are also quite different from those of *Albara vinacea* (Moore).

MALE. 41.9, 41.4–42.4 mm. (2). Head and antenna brown; head paler towards labrum; palps pale brown. Antennae bipectinate; longest pectination nearly as long as greatest diameter of eye.

Colour pattern of upperside as in figures of *A. vinacea* (Moore) in Seitz (*loc. cit.*) and Bryk (*loc. cit.*) but with pale medial patches edged with dark brown and more proximal postmedial line faintly marked. Underside of fore wing yellow; costa irrorated with brown basad; well-marked, dark brown discocellular spot, and smaller spot at posterodistal angle of cell; central part of postmedial fascia and arcuate subterminal fascia well marked and dark brown. Underside of hind wing



FIGS. 19-22a. (19) *Tridrepana fulvata celebica* ssp. n., male genitalia. (20-22a) *Albara fuscilinea* sp. n. Male: 20, aedeagus; 21, eighth sternum and tergum; 22, genitalia. 22a, Outer surface of prothoracic leg.

yellow, with discellular spot as in fore wing, and large dark brown patch at posterior angle of cell extending to Cu_{1b} or just posterior to this vein; strongly marked, dark brown postmedial fascia, trace of subterminal fascia antieriad. Foreleg with remarkable vestiture (see Text-fig. 22a).

Colour of abdomen doubtful, probably similar in colour to adjacent part of hind wing.

Male genitalia as in Text-figs. 20–22.

FEMALE. Unknown.

DISTRIBUTION. Malaya. There is a female from Sumatra in the Entomological Laboratory at Wageningen which probably belongs to this species.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. MALAYA: ♂ holotype and 1 ♂ paratype, Selangor, Bukit Kutu, 8,500 ft., 11.22.iii.1931 (H. M. Pendlebury); 1 ♂ paratype, Malay Peninsula.

Callidrepana vanbraeckeli Gaede

Callidrepana vanbraeckeli Gaede, 1934, *Bull. Mus. H. n. Belg.* 10 (No. 26): 3.

TYPE. Holotype ♂, Tonsea Lama (NE. Celebes), 8 May (van Braeckel); *Drepanidae* genitalia slide No. 912. In the Institut Royal des Sciences Naturelles, Brussels.

This species is readily distinguished from *C. micacea* Walker, *C. biocularis* Moore and *C. discipunctata* Warren by the delicate colouring and the predominantly pale coloured postmedial fascia of both wings (see Pl. 65, fig. 5). The male genitalia also readily separate the species (see Text-figs. 23–24). The female genitalia are figured in Text-figure 25.

MATERIAL EXAMINED. *Institut Royal des Sciences Naturelles, Brussels*. N. CELEBES: ♂ holotype; 1 ♀ from type locality, 10 May (van Braeckel). *British Museum (Nat. Hist.)*. W. CELEBES: 2 ♂, 1 ♀, Paloe, Loda, 4,000 ft., May, 1937 (J. P. A. Kalis); 3 ♂ Paloe, Sidaonta, 4,500 ft., June, 1937 (J. P. A. Kalis); 8 ♂, Paloe, Koelawi, 3,100 ft., March, 1937 (J. P. A. Kalis); 1 ♂, 1 ♀, Paloe, G. Tompoe, 2,700 ft., Jan., 1937 (J. P. A. Kalis); 4 ♂, Paloe, Lindoe, 3,700 ft., Apr., 1937 (J. P. A. Kalis).

Six males from Malaya in the *British Museum (Nat. Hist.)*, one male from Malaya in the *Zoological Museum at Bonn* and two males from Malaya in the *Natural History Museum, Vienna*, belong to this species but may represent a separate subspecies.

Campylopteryx fleximargo (Warren)

Drepana fleximargo Warren, 1896, *Novit. zool.* 3: 272.

Campylopteryx fleximargo (Warren), Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10: 476 (rather inaccurate but useful colour-plate: the medial, hyaline area in the hind wing is not shown).

Campylopteryx fleximargo (Warren), Gaede, 1931, *Lepid. Cat.* 49: 40.

Campylopteryx sublineata Warren, 1902, *Novit. zool.* 9: 340. Holotype ♂, Watubela Is., Kissoei (Kühn). **Syn. nov.**

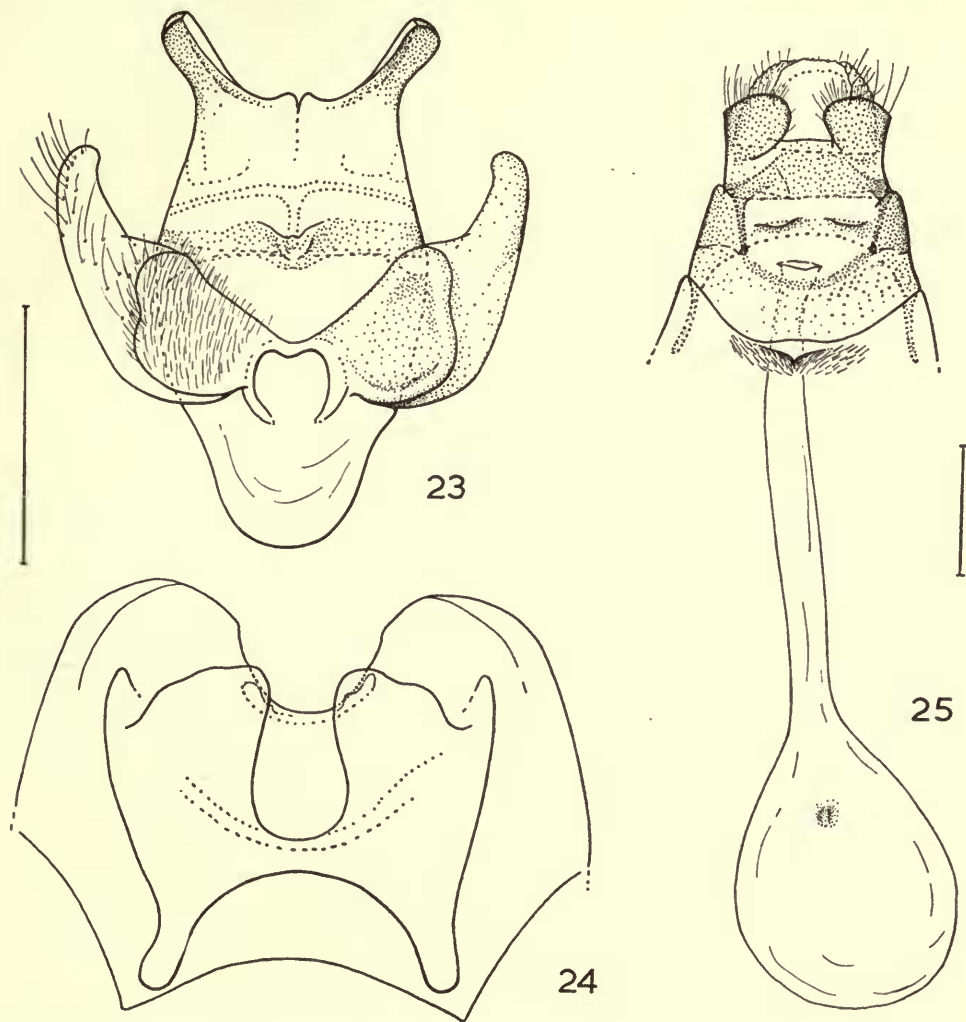
Campylopteryx sublineata Warren, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10: 476 (slightly inaccurate colour-plate).

Campylopteryx sublineata Warren, Gaede, 1931, *Lepid. Cat.* 49: 40.

TYPE. Holotype ♂, Fergusson Is., xi.1894 (A. S. Meek).

I have compared the holotypes (including the genitalia) of *C. sublineata* Warren

and *C. fleximargo* (Warren) and found them conspecific. The type of *C. sublignata* Warren is simply a rather small pale specimen of the species. There is an almost complete range of variation from pale grey to dark brown in the series of the British Museum (Nat. Hist.) collection.



FIGS. 23-25. *Callidrepana vanbraeckeli* Gaede. Male: 23, genitalia; 24, eighth sternum and tergum. 25, Female genitalia.

Oreta singapura Swinhoe

Oreta singapura Swinhoe, 1892, Catalogue of Eastern Lepidoptera Heterocera in the Oxford University Museum, Part 1, p. 243. (Pl. 7, fig. 15, in colour; shape of wings inaccurate.)

TYPE. Holotype ♂ (not ♀ as stated in original description), Singapore; in Hope Department Museum, Oxford.

The colour-pattern readily distinguishes this species from the rest of the genus. The ovate spot, edged proximally with white, situated at the end of the cell on the fore wing, although present in some other species of this genus, is particularly conspicuous.

The extensive individual variation in the coloration of this species (see reference below to the colour plates) has resulted in the publication of numerous synonyms for the Papuan subspecies.

Oreta singapura singapura Swinhoe

Oreta singapura Swinhoe, 1892.

Oreta singapura Swinhoe, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 480.

Oreta singapura Swinhoe, Gaede, 1931, *Lepid. Cat.* **9** : 46.

The nominate subspecies can be separated from the remaining subspecies by the structure of the male genitalia (see Text-figs. 26–28). Neither the colour pattern nor the female genitalia seem to provide useful diagnostic characters.

DISTRIBUTION. Singapore, Malaya, Sumatra and Borneo.

Oreta singapura kalisi ssp. n.

TYPE. Holotype ♂, W. Celebes, Paloe, Loda, 4,000 ft., May, 1937 (J. P. A. Kalis).

Apparently indistinguishable from the other subspecies externally, but easily recognized by the male genitalia (Text-figs. 29–31). The female is unknown.

DISTRIBUTION. Celebes.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. W. CELEBES : ♂ holotype, and 1 ♂ paratype with same data as holotype ; 5 ♂ paratypes, Paloe, Sidaonta 4,500 ft., June, 1937 (J. P. A. Kalis) ; 10 ♂ paratypes, Paloe, Koelawi, 3,100 ft., March, 1937 (J. P. A. Kalis) ; 7 ♂ paratypes, Paloe, Lindoe, 3,700 ft., Apr., May, 1937 (J. P. A. Kalis). *Landbouwhogeschool, Wageningen*. CELEBES : 1 ♂ paratype, Tadjamboe, 13.vii.1937 (Toxopeus) ; 1 ♂ paratype, Paloe, Sidaonta, 1,500 m., viii.1937 (J. P. A. Kalis).

Oreta singapura continua Warren

Cobanilla continua Warren, 1899, *Novit. zool.* **6** : 313.

Oreta continua (Warren), Warren 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 313. (Good colour-plate, ♂.)

Oreta continua (Warren), Gaede, 1931, *Lepid. Cat.* **49** : 43.

Oreta dissimilis Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 482. (Good colour-plate, ♂ and ♀.) Type locality : Dutch New Guinea, Snow Mts. **Syn. nov.**

Oreta dissimilis Warren, Gaede, 1931, *Lepid. Cat.* **49** : 44.

Oreta aurata Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 483. (Good colour-plate, ♀.)

Type locality : Dutch New Guinea, Snow Mts. **Syn. nov.**

Oreta aurata Warren, Gaede, 1931, *Lepid. Cat.* **49** : 43.

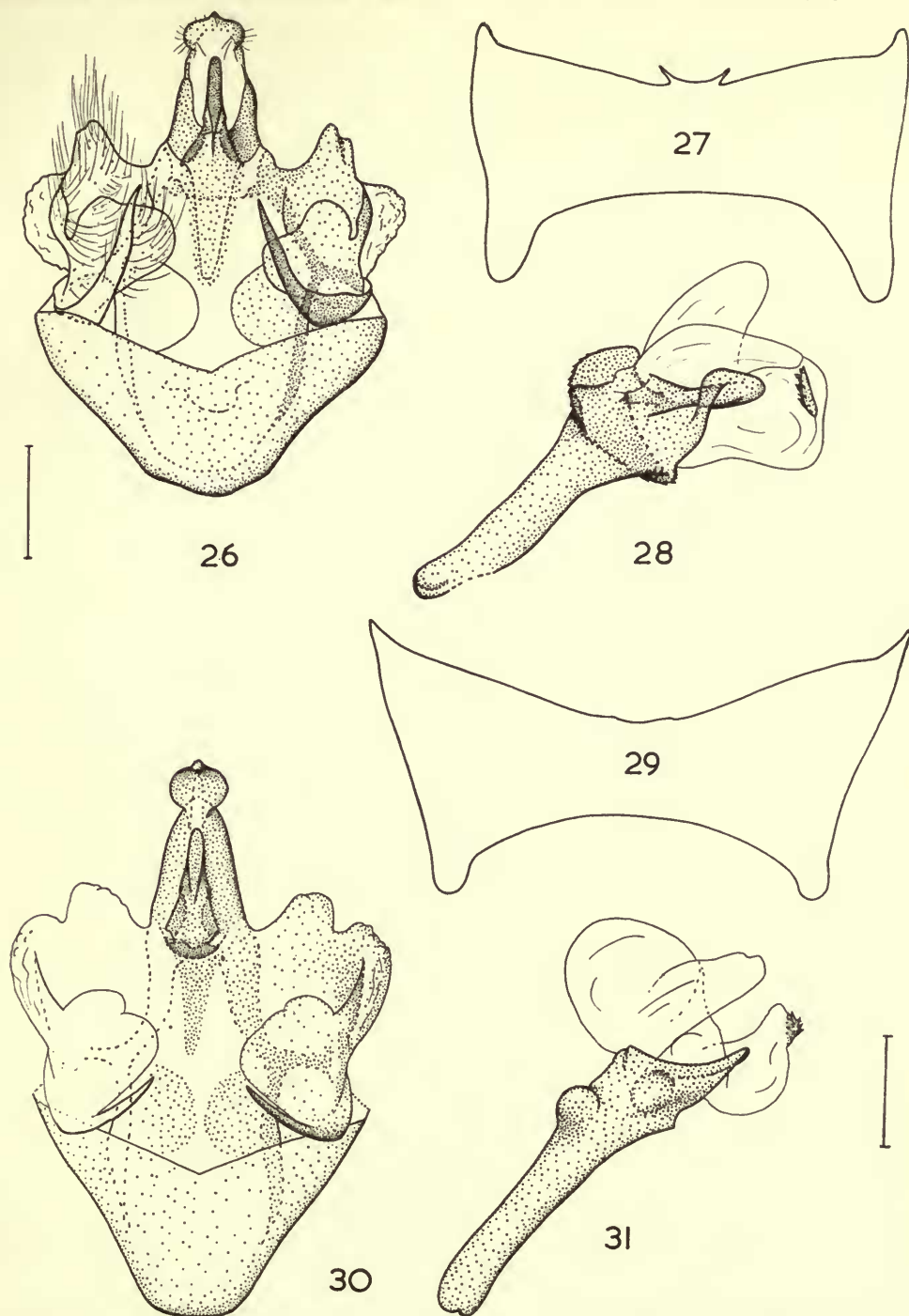
Oreta ustimacula Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 483. (Good colour-plate ♀.)

Type locality : Dutch New Guinea, Snow Mts. **Syn. nov.**

Oreta ustimacula Warren, Gaede, 1931, *Lepid. Cat.* **49** : 43.

Holoreta leucospila Joicey & Talbot, 1917, *Ann. Mag. nat. Hist.* (8) **10** : 82. (Good colour-plate.)

Type locality : Dutch Guinea, Wandammen Mts. **Syn. nov.**

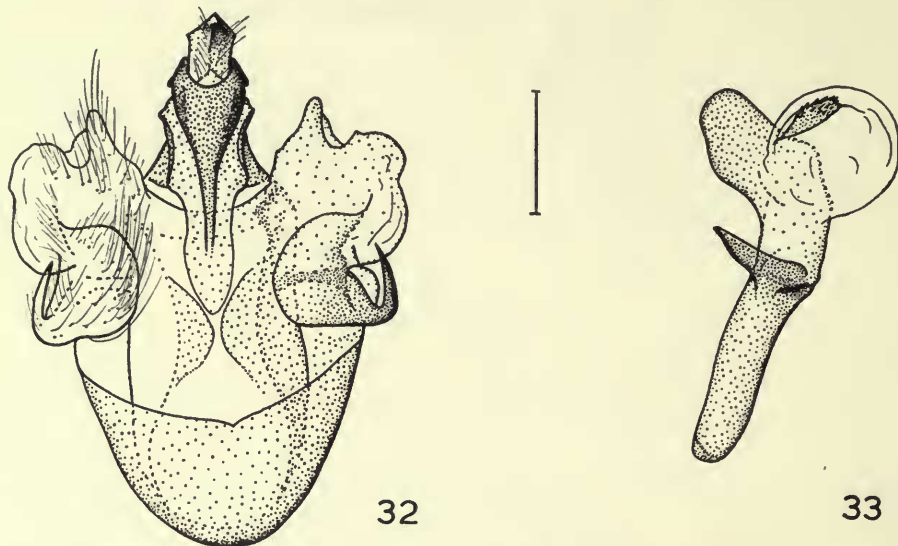


FIGS. 26-31. (26-28) *Oreta singapura singapura* Swinhoe. Male: 26, genitalia; 27, eighth sternum; 28, aedeagus. (29-31) *Oreta singapura kalisi* ssp. n. Male: 29, eighth sternum; 30, genitalia; 31, aedeagus.

Oreta singapura continua ab. *fulvata* Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 483 and *O. singapura continua* ab. *lilacina* Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 483 are figured in colour-plate 50 in Seitz. *Oreta singapura continua* ab. *flavobscura* (Joicey & Talbot), 1917, *Ann. Mag. nat. Hist.* (8) **10** : 83, is figured in colour plate 3 accompanying the original description.

TYPE. Holotype ♂, British New Guinea, Milne Bay, x.1889 (A. S. Meek). Best distinguished from the nominate subspecies by the male genitalia (Text-figs. 32-33).

DISTRIBUTION. British and Dutch New Guinea.



FIGS. 32-33. *Oreta singapura continua* Warren. Male : 32, genitalia ; 33, aedeagus.

Oreta griseotincta Hampson

Oreta griseotincta Hampson, 1893, *Fauna Brit. India, Moths*, **1** : 350.

TYPE. Holotype ♂, Sikkim, 1888 (Möller).

This species is not readily distinguishable externally from *Oreta carnea* (Butler), its closest apparent relative, but can be separated from it easily by the male and female genitalia (see Text-figs. 34-43).

There is considerable individual variation in the coloration. The brown colour of the upperside may be reddish or orange and either very dark or very pale.

The Malayan subspecies of this species and the closely related Indonesian species *Oreta carnea* (Butler) occur together in central and southern Malaya. Had it not been for this sympatry I should certainly have regarded them as subspecies of one species. This apparent break in the subspecies chain of *O. griseotincta* Hampson may not, however, be real ; for although sympatry does exist in a broad geographical sense, information from the data labels suggests that there may be an ecological barrier between it and *O. carnea* (Butler) : *O. griseotincta* Hampson seems to be confined to the higher inland regions while *O. carnea* (Butler) is only found at much lower alti-

tudes. This ecological isolation is presumably dependent upon some adaption to the environment, perhaps to different temperatures or to feeding on different food plants. A solitary male specimen of *O. griseotincta* Hampson (in the British Museum (Nat. Hist.)) from Singapore, which is comparatively low-lying, seems to present contradictory evidence, however, so that until further material, both from Malaya and Singapore is available, final conclusions cannot be drawn.

***Oreta griseotincta griseotincta* Hampson**

Oreta griseotincta Hampson, 1893.

Oreta griseotincta Hampson, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484. (Good colour-plate, ♂.)

Oreta griseotincta Hampson, Gaede, 1931, *Lepid. Cat.* 49 : 44.

Oreta olivacea Dudgeon, 1899, *J. Bombay nat. Hist. Soc.* 12 : 657. **Syn. nov.**

Oreta olivacea Dudgeon, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484.

Oreta olivacea Dudgeon, Gaede, 1931, *Lepid. Cat.* 49 : 45.

Oreta carnea nucicolor Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484. (Good colour-plate, ♀.) **Syn. nov.**

Oreta carnea var. *nucicolor* Warren, Gaede, 1931, *Lepid. Cat.* 49 : 43.

Separable from the Malayan subspecies by the shape of the gnathus and valves in the male genitalia (Text-fig. 34). The peculiarly twisted ostial plate in the female genitalia of the only female available for examination (Text-fig. 37) may not be typical of this subspecies.

I have compared the holotype of *O. carnea nucicolor* Warren and *O. olivacea* Dudgeon with the holotype and topotypical material of *O. griseotincta* Hampson and found them to be conspecific.

DISTRIBUTION. NE. India and Sikkim.

***Oreta griseotincta acutior* ssp. n.**

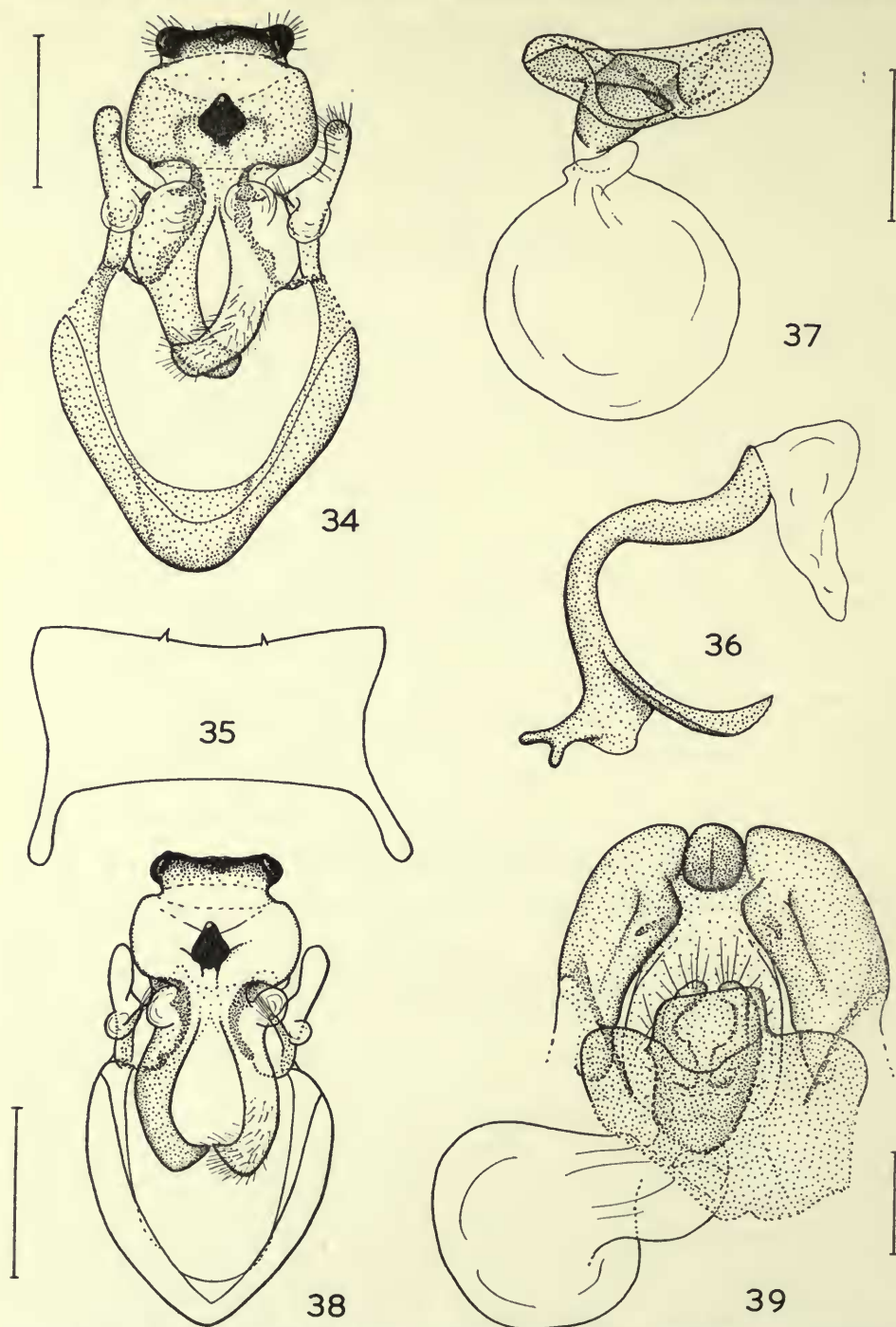
TYPE. Holotype ♂, Malay Penin., Selangor, Bukit Kutu, 3,500 ft., 18 April, 1926 (H. M. Pendlebury).

MALE. 33.6–41.6, 36.8 mm. (15). Similar to nominate subspecies but with more acutely pointed gnathus and more acutely pointed apex to anterior process of valve in genitalia (see Text-fig. 38).

FEMALE. 40.8 mm. (1). Similar to female of nominate race externally. (See Text-fig. 39 of female genitalia.)

DISTRIBUTION. Malaya and Singapore.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. MALAYA : 2 ♂ paratypes, Perak, Larut Hills, 3,700 ft., 13, 17.ii.1932 (H. M. Pendlebury) ; ♀ allotype, 3 ♂ paratypes, Pahang, Cameron Highlands, 4,700 ft., 4,800 ft., 23.vi.1935, 10–26.v. 1939 ; 5 ♂ paratypes, Pahang, Fraser's Hill, 4,200 ft., 4,250 ft., vi.1921, 6.i.1929, 11.ix.1931, 3, 16.vii.1936 (A. S. Corbet and others) ; ♂ holotype, 7 ♂ paratypes, Selangor, Bukit Kutu, 3,300–3,500 ft., iv.1915 ; 13, 18.iv.1926, 26.ix.1932 (H. M. Pendlebury, A. R. Sanderson). SINGAPORE : 1 ♂ paratype, Fraser's Hill, 17.vi. 1930 (V. N. Riley).



FIGS. 34-39. (34-36) *Oreta griseotincta griseotincta* Hampson. Male: 34, genitalia; 35, eighth sternum; 36, aedeagus. 37, Female genitalia. (38-39) *Oreta griseotincta acutior* ssp. n. 38, Male genitalia; 39, female genitalia.

Oreta carnea (Butler)

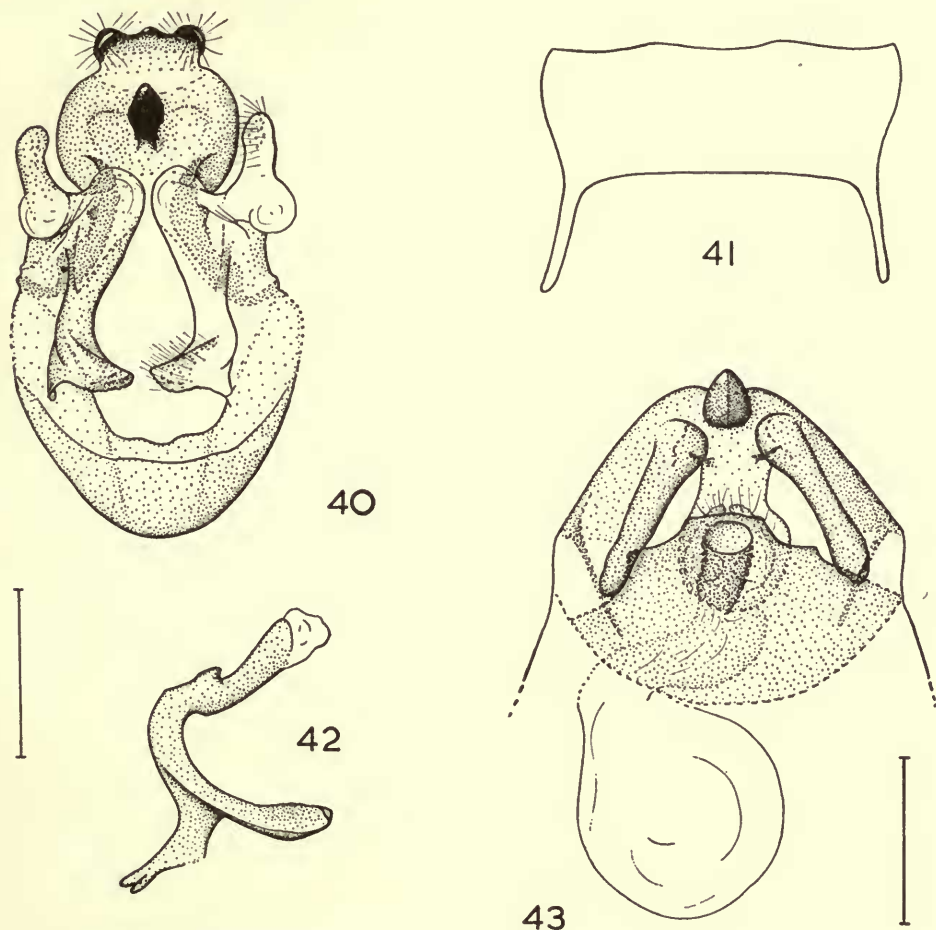
Agnidra carnea Butler, 1892, *Proc. zool. Soc. Lond.* **1892** : 125.

Oreta carnea (Butler), Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 484.

Oreta carnea (Butler), Gaede, 1931, *Lepid. Cat.* **49** : 43.

Drepana berenica Swinhoe, 1893, *Ann. Mag. nat. Hist.* (6) **12** : 258. **Syn. nov.**

Cobanilla berenica (Swinhoe), Swinhoe, 1902, *Trans. ent. Soc. London*, **1902** : 588, (= *hepaticata* Warren and *cardinalis* Warren.)



FIGS. 40-43. *Oreta carnea* (Butler). Male : 40, genitalia ; 41, eighth sternum ; 42, aedeagus. 43, Female genitalia.

Oreta berenice (sic) (Swinhoe), Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 485.

Oreta berenica (Swinhoe), Gaede 1931, *Lepid. Cat.* **49** : 43.

Cobanilla hepaticata Warren, 1891, *Novit. zool.* **4** : 13. **Syn. nov.**

Oreta hepatica (sic) (Warren), Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 485. (Good colour-plate, ♂.)

Oreta hepaticata (Warren), Gaede, 1931, *Lepid. Cat.* **49** : 44.

Cobanilla cardinalis Warren, 1897, *Novit. zool.* 4: 13. **Syn. nov.**

Oreta cardinalis (Warren), Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10: 485. (Good colour-plate ♀.)

Oreta cardinalis (Warren), Gaede, 1931, *Lepid. Cat.* 49: 43.

TYPE. Holotype ♀, (Borneo), Sandakan.

Similar externally to *O. griseotincta* Hampson, but readily distinguished from it by the male and female genitalia (Text-figs. 40-43).

I have examined the holotype of *Drepana berenica* Swinhoe, *Cobanilla hepaticata* Warren, *Cobanilla cardinalis* Warren and *Oreta carnea* (Butler) and found them to be conspecific.

DISTRIBUTION. Malaya, Singapore, Sumatra, Java and Borneo. (See remarks on the distribution under *O. griseotincta* Hampson.)

Oreta identata sp. n.

TYPE. Holotype ♂, W. Celebes, Paloe, G. Tompoe, 2,700 ft., Jan., 1937 (J. P. A. Kalis).

Best distinguished from *Oreta griseotincta* Hampson and from *Oreta carnea* Butler, its closest apparent relatives, by the male and female genitalia (see Text-figs.).

MALE (Pl. 66, fig. 3). 39.2, 37.0-41.6 mm. (30). Head and palps usually dark brown or dark reddish brown, paler towards labrum; antennae as for dorsal surface of thorax, largest antennal pectination equal to one-half greatest diameter of eye.

Upperside of thorax usually same colour as ground colour of wings; similar in colour to medial shade of fore wing in some specimens. Wing shape and form of colour-pattern as in plate. Venation of fore wing as in Text-fig. 44. Hind wing with Sc approximated to Rs distal to end of cell. Upperside of fore wing lustrous, very variable in colour: pale greyish, yellowish or reddish brown, with or without well-marked fasciae and medial shade; reddish or purplish brown, with or without medial markings; dark reddish or purplish brown with or without medial markings. Apical area of wing and basal area invariably paler than rest of wing and often irrorated with white scales. Upperside of hind wing usually similar in colour to ground colour of fore wing, but sometimes of same colour as medial shade of fore wing; medial shade usually weakly marked. Underside of both wings lustrous; usually very pale reddish brown speckled with black; postmedial fascia on both wings present, usually moderately well marked. Costa of fore wing yellowish most strongly coloured apicad.

Underside of thorax usually pale yellowish brown. Legs with long dense fringes of hair-like scales. Following parts of legs bright reddish brown or orange: outer surface of femur, tibia and whole of tarsus of prothoracic leg; outer surface of tibia and tarsus, and both surfaces of tarsal fringe of mesothoracic leg; and outer surface of tibial fringe and both surfaces of tarsal fringe of metathoracic leg. Remaining surfaces of legs pale yellowish brown.

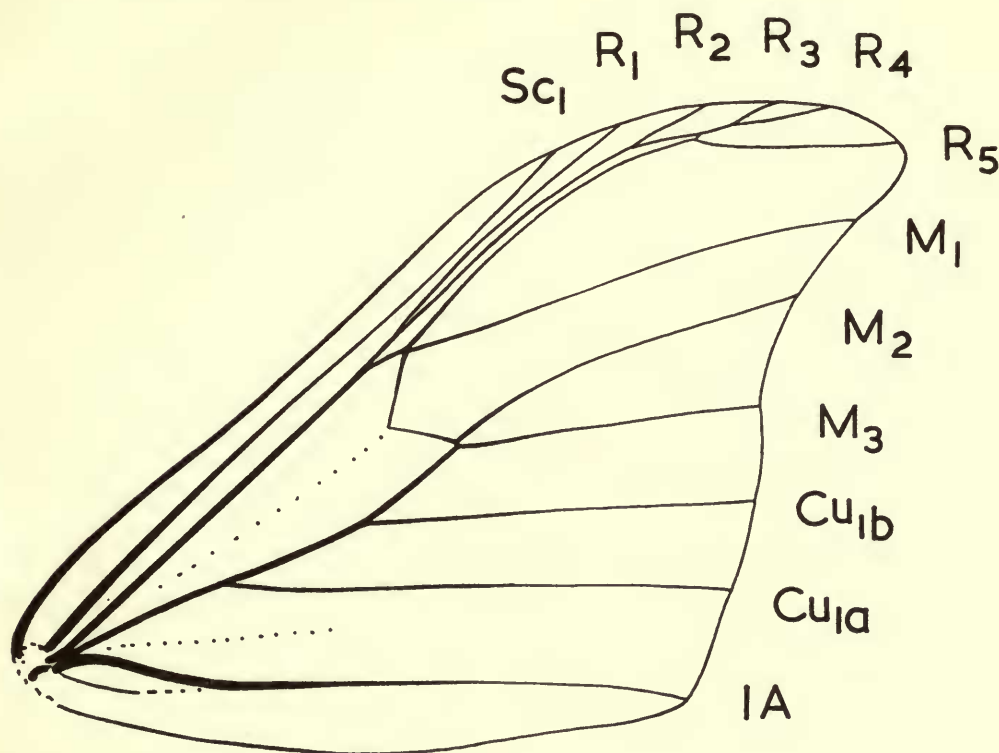
Abdomen similar in colour to corresponding parts of thorax, but paler posteriad dorsally.

Male genitalia as in Text-figs. 45-47.

FEMALE. 43.2, 37.4-45.6 mm. (16). Similar to male but with shape and form of colour-pattern of fore wing as in female *O. griseotincta* Hampson (see plate in Seitz, *loc. cit.*). Colour of wings as in male, but often much paler.

Female genitalia as in Text-fig. 48.

DISTRIBUTION. NE., W. and SW. Celebes.

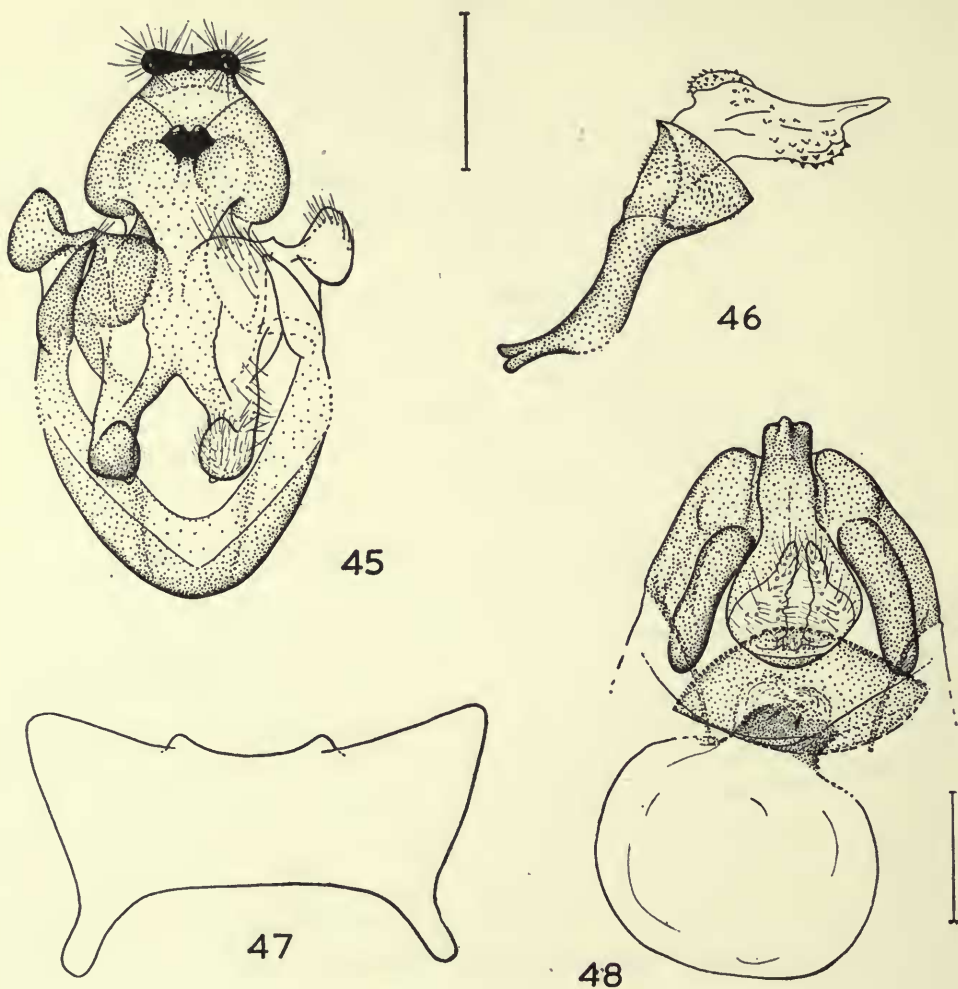


44

FIG. 44. *Oreta identata* sp. n., fore wing venation.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)* N. CELEBES: 1 ♀ paratype, N. Celebes (Curtis); 1 ♀ paratype, Minahassa, Tomohon, vii.1954 (C. A. M. G. Alston). W. CELEBES: 2 ♂ paratypes, Paloe, G. Rangoenau, 1,800 ft., Nov. and Dec., 1936 (J. P. A. Kalis); holotype ♂ and 10 ♂ paratypes, Paloe, G. Tompoe, 2,700 ft., Feb. and Jan., 1937 (J. P. A. Kalis); 1 ♂ and 2 ♀ paratypes, Paloe, Koelawi, 3,100 ft., March, 1937 (J. P. A. Kalis); 8 ♂ paratypes, Paloe, Lindoe, 3,700 ft., April, 1937 (J. P. A. Kalis); 5 ♂ paratypes, Paloe, Loda, 4,000 ft., May, 1937 (J. P. A. Kalis); 1 ♀ and 5 ♂ paratypes, allotype ♀, Paloe, Sidaonta, June, 1937 (J. P. A. Kalis). SW. CELEBES: 2 ♀ paratypes, Parangbobo Goa, G. Lampo-

battang, 5,000 ft., May, 1938 (J. P. A. Kalis) ; 2 ♀ paratypes, Tjamba, near Maros, 1,500 ft., Feb., 1938 (J. P. A. Kalis) ; 6 ♂ paratypes, Pangean, near Maros, 2,000 ft., March, 1938 (J. P. A. Kalis). *Zoological Museum, Amsterdam.* NE. CELEBES :



FIGS. 45-48. *Oreta identata* sp. n. Male : 45, genitalia ; 46, aedeagus ; 47, eighth sternum. 48, Female genitalia.

4 ♀ paratypes, Minahassa, 1920 (Coll. P. J. v. d. Bergh, Lzn.) ; 1 ♀ paratype, Bolang Mongondo (Coll. P. J. v. d. Bergh, Lzn.) ; 2 ♀ paratypes, Rurukan, 1920. *Rijksmuseum van Natuurlijke Historie, Leiden.* NE. CELEBES : 2 ♀ paratypes, Minahassa, 1922 (P. J. v. d. Bergh). *Landbouwhogeschool, Wageningen.* W. CELEBES : Paloe Bay, Belitang, 15-20 July, 1928.

Oreta extensa Walker

Oreta extensa Walker, 1855, *List Lep. Het. Br. Mus.* 5 : 1166.

Oreta extensa Walker, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484.

Oreta extensa Walker, Gaede, 1931, *Lepid. Cat.* 49 : 44.

Oreta figlina Swinhoe, 1905, *Ann. Mag. nat. Hist.* (7) 16 : 142. **Syn. nov.**

Oreta figlina Swinhoe, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484. (Poor, misleading colour-plate.)

Oreta figlina Swinhoe, Gaede, 1931, *Lepid. Cat.* 49 : 44.

TYPE. Holotype ♂, East Indies.

From an examination of the holotype and material of this species from India and Indonesia it is clear that the type locality must be restricted. I select "Java" as the restricted locality for this species.

Externally this species closely resembles *O. roepkei* sp. n. but the apex of the fore wing is usually not so strongly produced, and the oblique, postmedial fascia on the fore wing is usually straight posteriorly, not slightly sinuous. The male and female genitalia readily separate the species (Text-figs. 49–52).

There are two colour-forms as in *O. roepkei* sp. n.

DISTRIBUTION. NE. India, Sumatra and Java (including E. Java). Specimens from S. India, Ceylon, Formosa, Celebes and Buru (in the British Museum (Nat. Hist.)) probably also belong to this species.

Oreta roepkei sp. n.

TYPE. Holotype ♂ (E. Java) Tengger, Singolangoe, 5,000 ft., May, 1934 (J. P. A. Kalis).

This species can usually be distinguished from the Javanese specimens of *O. extensa* Walker, probably the most closely related species, by the sinuous, not straight, posterior part of the postmedial fascia. The male and female genitalia readily separate the two species.

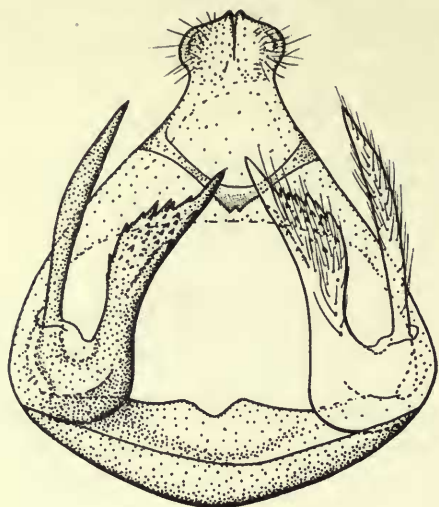
A marked dimorphism in the colour-pattern of the males is worthy of note and is described below.

MALE (Pl. 66, fig. 1). 46.4, 42.4–49.4 mm. (25). Yellow-and-brown form. Head and palp red. Antenna unipectinate; pale yellow-brown; longest antennal pectination equal to about one-half greatest diameter of eye.

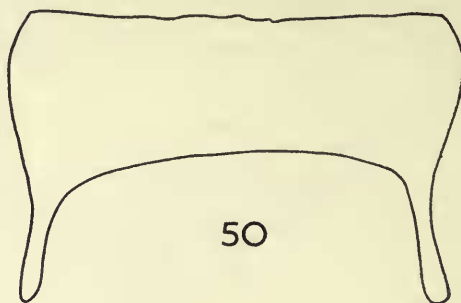
Collar yellow. Upperside of thorax pale reddish brown speckled with white. Underside of thorax pale yellow or pale reddish yellow, but red anteriorly. Outer surface of legs reddish orange, less strongly pigmented on inner surface.

Wing shape and form of colour-pattern of upperside as in plate. Fore wing venation as in Text-fig. 53. Hind wing with Sc approximating to Rs distal to end of cell.

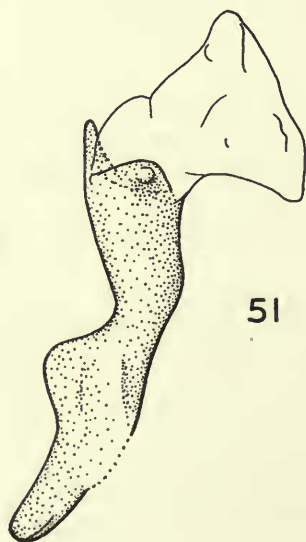
Upperside of fore wing reddish-brown lightly striated transversely with dark brown, but with yellow basal area striated with reddish brown, and with yellowish area lightly irrorated with black distal to posterior end of yellow postmedial fascia. Costa yellow basad. Apex and basal part of costal area irrorated with white. Small white discocellular spot and sometimes trace of spot at posterior angle of cell. Fore



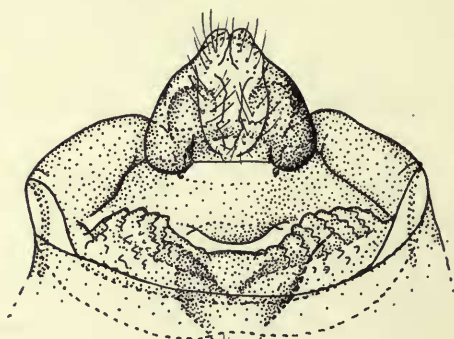
49



50



51

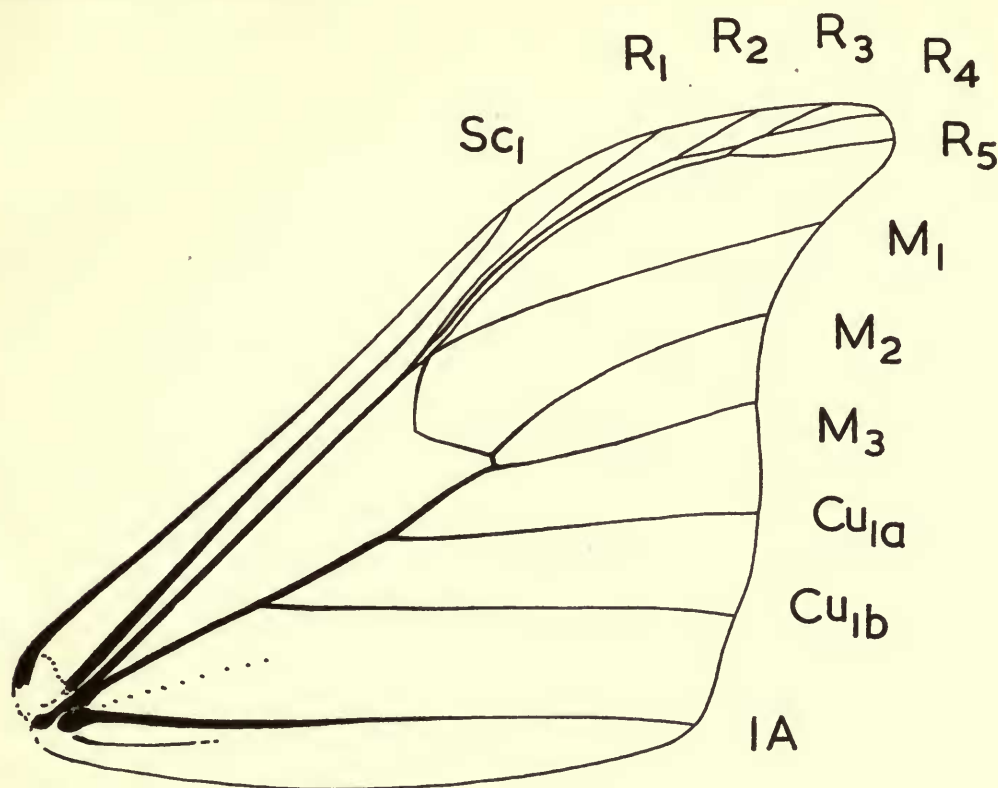


52



FIGS. 49-52 *Oreta extensa* Walker. Male; 49, genitalia; 50, eighth sternum; 51, aedeagus. 52, Female genitalia.

wing lustrous except for cell, narrow area proximal to anterior part of postmedial fascia and small area anterior of tornus. Hind wing with dark areas reddish brown and pale areas yellow; lustrous except for band along outer margin near anal angle; cell-spots as in fore wing.



53

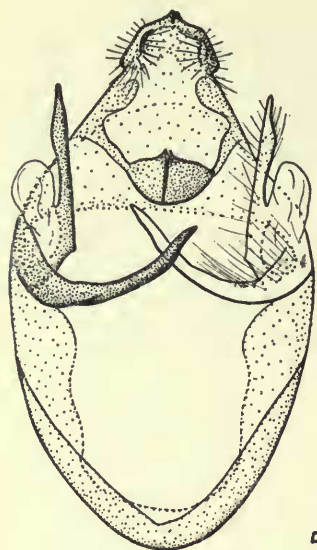
FIG. 53. *Oreta roepkei* sp. n., fore wing venation.

Underside of fore wing reddish orange striated with black; trace of broad, yellow postmedial fascia, most well-marked costad. Underside of hind wing yellow, but reddish orange basad striated with black in costal area, and reddish orange along anal margin and in broad area extending from apex nearly half-way along outer margin of wing. Underside of both wings lustrous.

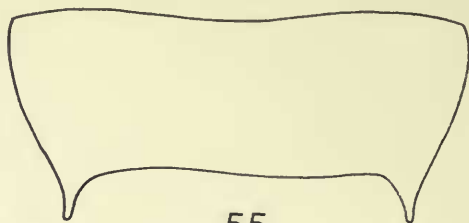
Abdomen reddish brown dorsally lightly irrorated with white; darker band anteriorly followed by yellowish transverse band; yellow posteriorly. Sides of abdomen pale reddish yellow. Ventral surface reddish orange.

Brown form. Upperside of both wings reddish brown with trace of pale basal area

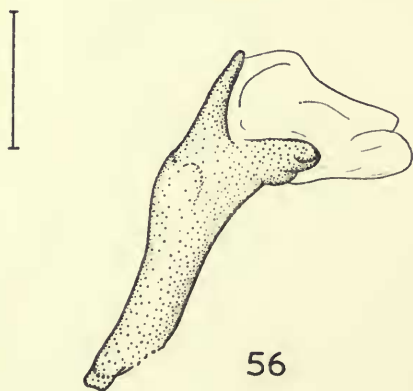
and weakly marked postmedial fascia. Fore wing irrorated with black between posterior end of postmedial fascia and outer margin. Hind wing often strongly speckled with black especially at apex. Underside of both wings reddish orange,



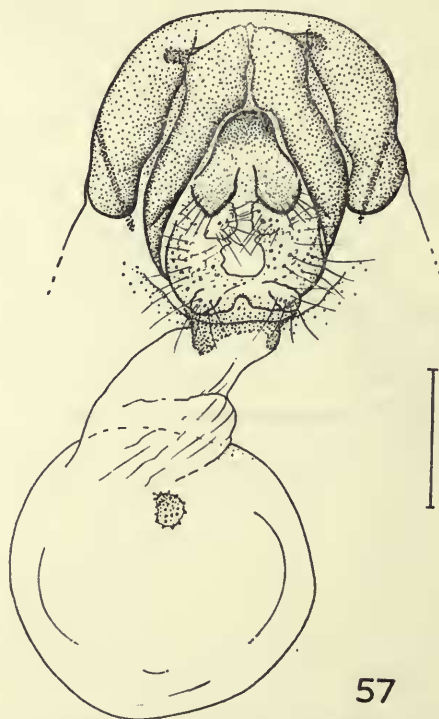
54



55



56



57

FIGS. 54-57. *Oreta roepkei* sp. n. Male : 54, genitalia ; 55, eighth sternum ; 56, aedeagus. 57, Female genitalia.

often speckled and transversely striated with black especially at tornus of fore wing and apex of hind wing.

Male genitalia as in Text-figs. 54-56.

FEMALE (Pl. 66, fig. 2). 51.5, 50.0-53.0 mm. (2). Similar to male but with following differences. Longest antennal pectination equal to about two-fifths greatest dia-

meter of eye. Shape of fore wing as in plate. Colour of both wings intermediate between two forms of male, and with black speckles extending as band along distal margin of postmedial in fore wing. Underside of fore wing with broad, well-marked, yellow postmedial fascia. Underside of hind wing as for yellow-and-brown form of male.

Female genitalia as in Text-fig. 57.

DISTRIBUTION. Known only from East Java.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. E^a JAVA: holotype ♂ and 20 ♂ paratypes, Tengger, Singolangoe, 5,000 ft., April, May, June, 1934 (J. P. A. Kalis); allotype ♀ and 11 ♂ paratypes, Kletak Tengger, 6,000 ft., May, June, 1934 (J. P. A. Kalis); 1 ♂ paratype, Waterfall Baoeng, 1,200 ft., July, 1934 (J. P. A. Kalis); 1 ♀ paratype and 12 ♂ paratypes, Djoenggo Ardjoeno, 4,500 ft., May, June, 1934 (J. P. A. Kalis); 4 ♂ paratypes, Nongkodjadjar, 4,000 ft., Jan., May, June, 1934 (J. P. A. Kalis). *Rijksmuseum van Natuurlijke Historie, Leiden*. E. JAVA: 1 ♂ paratype, Nongkodjadjar, 1911.

Oreta vatama Moore

Oreta vatama Moore, 1865, *Proc. zool. Soc. Lond.* 1865 : 816.

Oreta obtusa Walker, Strand, 1911, in Seitz, *Gross-Schmett. Erde*, 2 : 204 (*partim*). (Good colour-plate of *Oreta vatama* Moore.)

Oreta obtusa var. *vatama* Moore, Gaede, 1931, *Lepid. Cat.* 49 : 45.

Oreta obtusa Walker, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484 (*partim*).

TYPE. Holotype ♀, Darjeeling. Not examined. Said by Moore (*loc. cit*) to have been in the collection of A. E. Russel which according to Horn & Kahle (1935-37) has been lost.

The British Museum (Nat. Hist.) possesses, however, a specimen from the type locality which exactly fits the original description and which bears a determination label "*Oreta vatama* Moore" in Moore's handwriting. There seems little doubt therefore about the identity of this species. Examination of *O. vatama* Moore has shown that it is quite distinct from *Psiloreta obtusa* (Walker) to which various authors have referred it.

Psiloreta obtusa (Walker) comb. nov.

Oreta obtusa Walker, 1855, *List. Lep. Het. Br. Mus.* 5 : 1167.

Oreta obtusa Walker, Strand, 1911, in Seitz, *Gross-Schmett. Erde*, 2 : 204, *partim*, (= *vatama* Moore). (Colour-plate is of *O. vatama* Moore, not *O. obtusa* Walker.)

Oreta obtusa Walker, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 484, *partim*.

Oreta obtusa Walker, Gaede, 1931, *Lepid. Cat.* 49 : 45, *partim*.

Oreta obliquilinea Hampson, 1893, *Fauna Brit. India, Moths*, 1 : 349. **Syn. nov.**

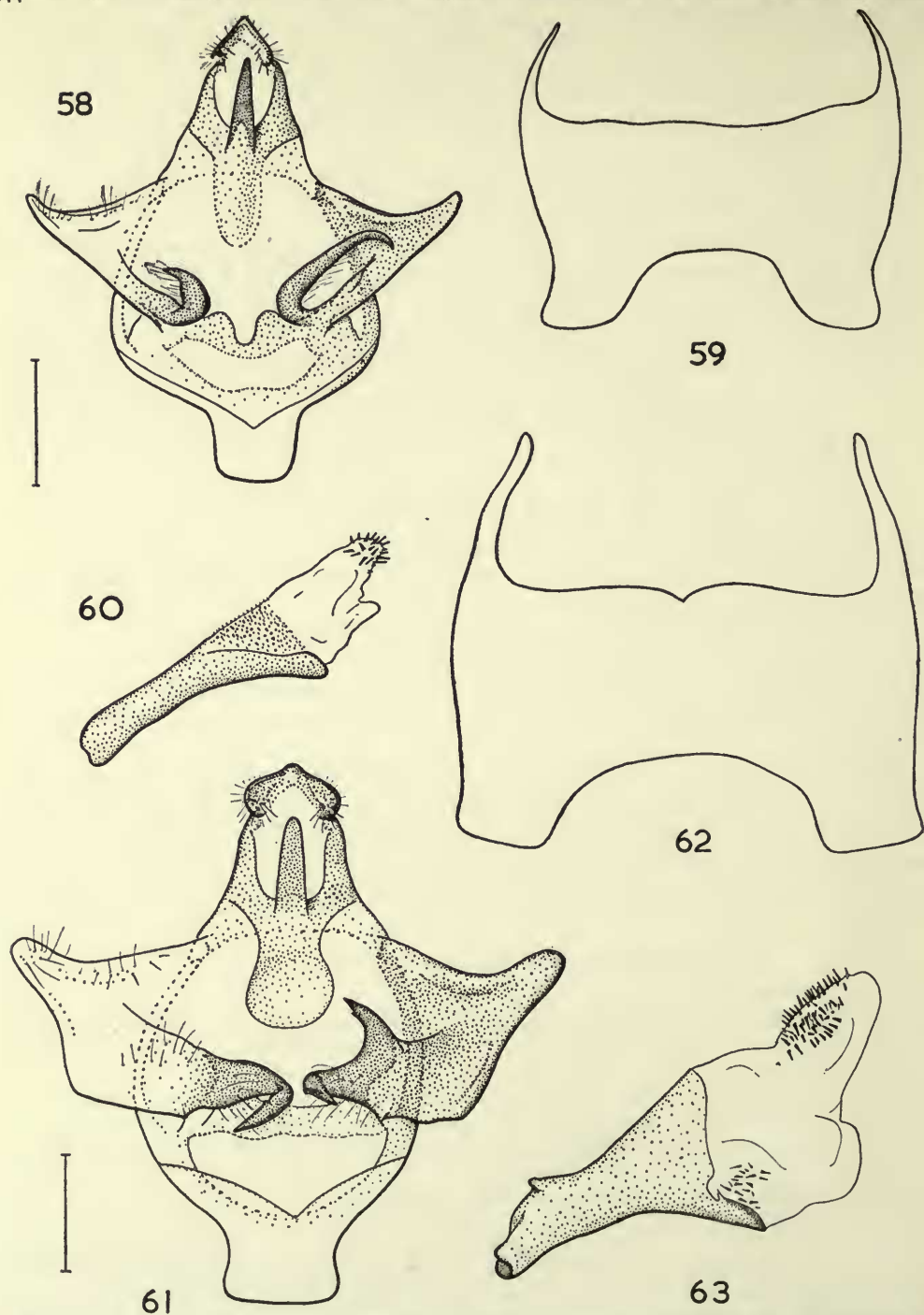
Psiloreta inconspicua, Warren, 1923, in Seitz, *Gross-Schmett. Erde*, 10 : 486. (One of the two ♂ syntypes well illustrated.) **Syn. nov.**

Psiloreta inconspicua Warren, Gaede, 1931, *Lep. Cat.* 49 : 48.

TYPE. Holotype ♀, India, Silhet.

I have compared the types (including the genitalia) of *O. obliquilinea* Hampson and *P. inconspicua* Warren with the type of *O. obtusa* Walker (and matched specimens) and found them conspecific.

DISTRIBUTION. India, Burma, China, Formosa, Indonesia.



FIGS. 58-63. (58-60) *Psiloreta obtusa obtusa* (Walker). Male: 58, genitalia; 59, eighth sternum; 60, aedeagus. (61-63) *Psiloreta obtusa speciosa* Bryk. Male: 61, genitalia; 62, eighth sternum; 63, aedeagus.

***Psiloreta obtusa obtusa* (Walker)**

This subspecies is well illustrated in Seitz, (*loc. cit.*) (as *P. inconspicua* Walker). The male genitalia are figured in Text-figs. 58–60.

Known only from North India.

***Psiloreta obtusa speciosa* Bryk stat. nov.**

Psiloreta speciosa Bryk, 1943, *Ark. Zool.* **34A**, No. 13 : 26. (Excellent photograph.)

TYPE. Holotype ♂ (NE. Burma), Kambaiti, 2,000 m., 12–17.vi.1934 (in the Naturhistoriska Riksmuseum, Stockholm).

Distinguishable from the nominate subspecies by the more strongly produced apex of the fore wing, and from all the other subspecies by the male genitalia (Text-figs. 61–63).

DISTRIBUTION. NE. Burma.

***Psiloreta obtusa aequitermen* Warren stat. nov.**

Psiloreta aequitermen Warren, 1923, in Seitz, *Gross-Schmett. Erde*, **10** : 485. (Good colour-plate, except for outer margin of hind wing which should be evenly rounded.)

Psiloreta aequitermen Warren, Gaede, 1931, *Lepid. Cat.* **49** : 47.

TYPE. I select the following syntype as the lectotype : a male, Malay Peninsula, Gunong, Ijau ; Drepanidae genitalia slide No. 832. Labelled in Warren's handwriting "*Psiloreta aequitermen* Type ♀ Warr."

The males can usually be distinguished from those of the nominate subspecies, but not from the other subspecies, by the more strongly produced apex of the fore wing (see plates in Seitz, **10**). The male genitalia readily separate this subspecies from the remaining subspecies (Text-figs. 64–65).

DISTRIBUTION. Malaya, Sumatra and Celebes.

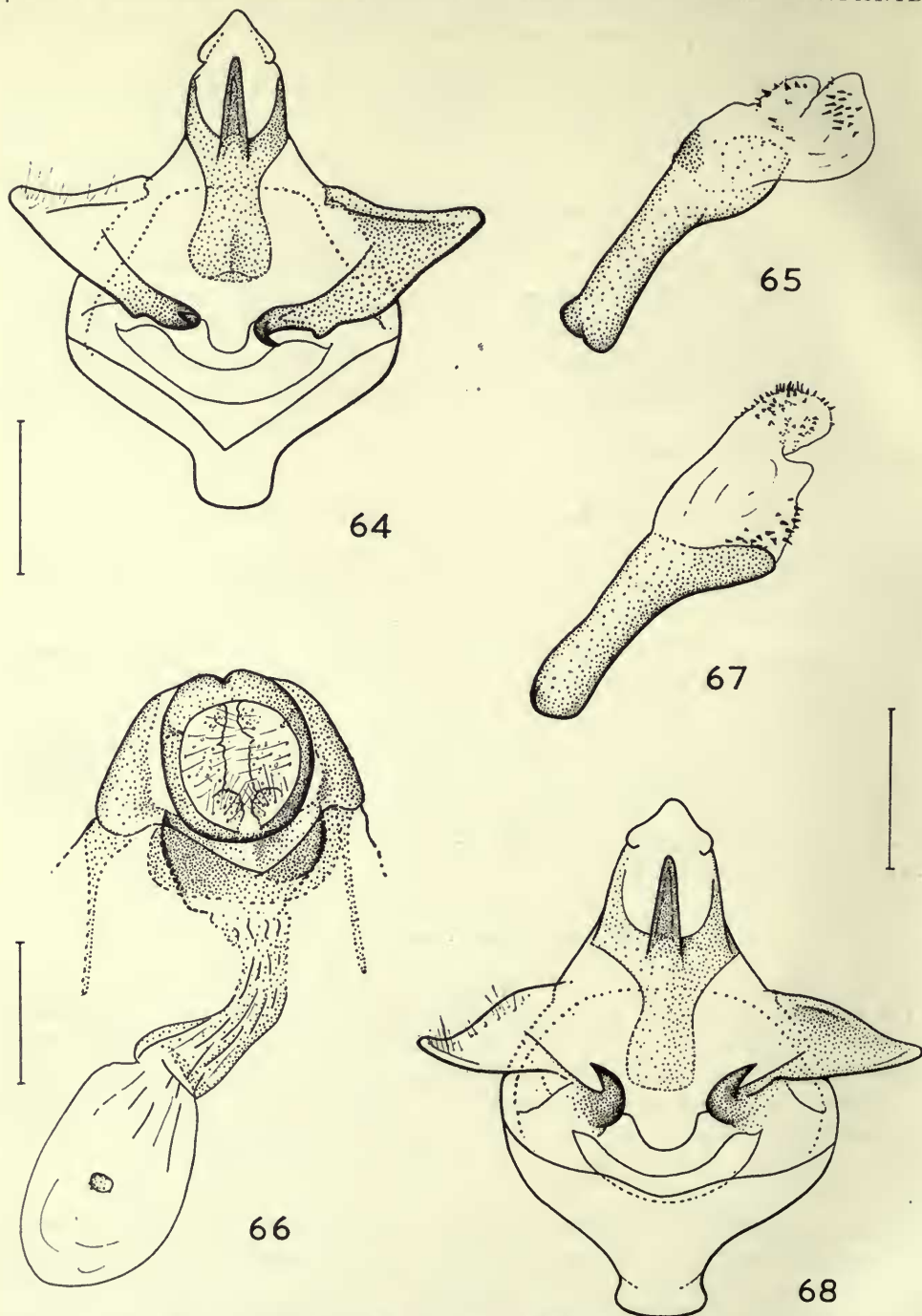
***Psiloreta obtusa javae* ssp. n.**

TYPE. Holotype male, Java, Mt. Gedeh, Aug., 1926.

Very similar externally to the nominate subspecies, but with the outer margin of the fore wing nearly straight in the male and only slightly convex in the female. Readily distinguished from the remaining subspecies by the male genitalia (Text-figs. 67–68). Not distinguishable from the nominate subspecies by the female genitalia (Text-fig. 66).

MEASUREMENTS. Male : 38.8, 34.4–43.6 mm. (40). Female : 45.1, 41.6–50.0 mm. (9).

POLYMORPHISM. As in *P. obtusa aequitermen* Warren and the nominate subspecies, this subspecies occurs in two distinct colour-forms which, from the data on the labels, appear to be unrelated to the date of capture. There is a yellow-and-brown form similar in pattern to the illustration of *P. obtusa aequitermen* Warren in Seitz, **10**, and a nearly uniformly coloured brown form as in the illustration of *Psiloreta inconspicua* Warren in Seitz, **10**. A further more rare yellow form has all the markings,



FIGS. 64-68. (64-65) *Psiloreta obtusa aequitermen* Warren. Male: 64, genitalia; 65, aedeagus. (66-68) *Psiloreta obtusa javae* ssp. n. 66, female genitalia. Male: 67, aedeagus; 68, genitalia.

except for the postmedial fascia and apical markings of the fore wing and the dark spot at the outer margin of the hind wing, absent or very faintly marked. There are several specimens exhibiting a colour-pattern intermediate between this yellow form and the yellow-and-brown form. Of 68 males examined 28 belonged to the brown form and 28 to the yellow-and-brown form: the remaining 12 belonged to the yellow form or were intermediate between this form and the yellow-and-brown form. Of 8 females examined, 4 were yellow-and-brown, 1 brown, and 3 yellow or intermediate between the yellow form and yellow-and-brown form.

DISTRIBUTION. Java and Bali.

MATERIAL EXAMINED. *British Museum (Nat. Hist.)*. E. JAVA: 1 ♀ and 18 ♂ paratypes, Nonkodjadjar, 4,000 ft., Jan., Apr., May, June, Dec., 1933, 1934 (J. P. A. Kalis); 1 ♀ and 7 ♂ paratypes, Kletak Tengger, 6,000 ft., May, June, 1934 (J. P. A. Kalis); 1 ♀ and 14 ♂ paratypes, Djoenggo Ardjoeno, 4,500 ft., May, June, 1934 (J. P. A. Kalis); 1 ♀ and 16 ♂ paratypes, Singolango Tengger, 5,000 ft., Apr.-July, 1934 (J. P. A. Kalis); 2 ♂ paratypes, Waterfall Baoeng, 1,200 ft., July, 1934 (J. P. A. Kalis). W. JAVA: holotype ♂, allotype ♀ and 2 ♂ paratypes, Mt. Gedeh, Aug., Sept., 1926; 1 ♂ paratype, Mt. Gedeh, 5,000 ft., Aug., Sept., 1924 (G. Overdijkink); 2 ♂ and 2 ♀ paratypes, Mt. Gedeh, 4,000 ft., 25.x-2.xi.1924 (G. Overdijkink); 2 ♂ paratypes, Mt. Gedeh, Perbawatie, 4,000-4,500 ft., 1.iv.1938; 1 ♀ paratype, Mt. Gedeh, Soekaboemi, iii.1938 (M. E. Walsh). E. BALI: 2 ♀ paratypes, Batoeriti, 3,500 ft., June, 1935 (J. P. A. Kalis). *Rijksmuseum van Natuurlijke Historie, Leiden*. JAVA: 1 ♂ and 1 ♀ paratype, Malabar Geb., Tjinjiroean, Gouv. Kina-Ondern., 1,700 m., Oct., Nov., 1909 (Dr. H. W. v. d. Weele); 1 ♀ paratype, (?) geb. 1888.

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